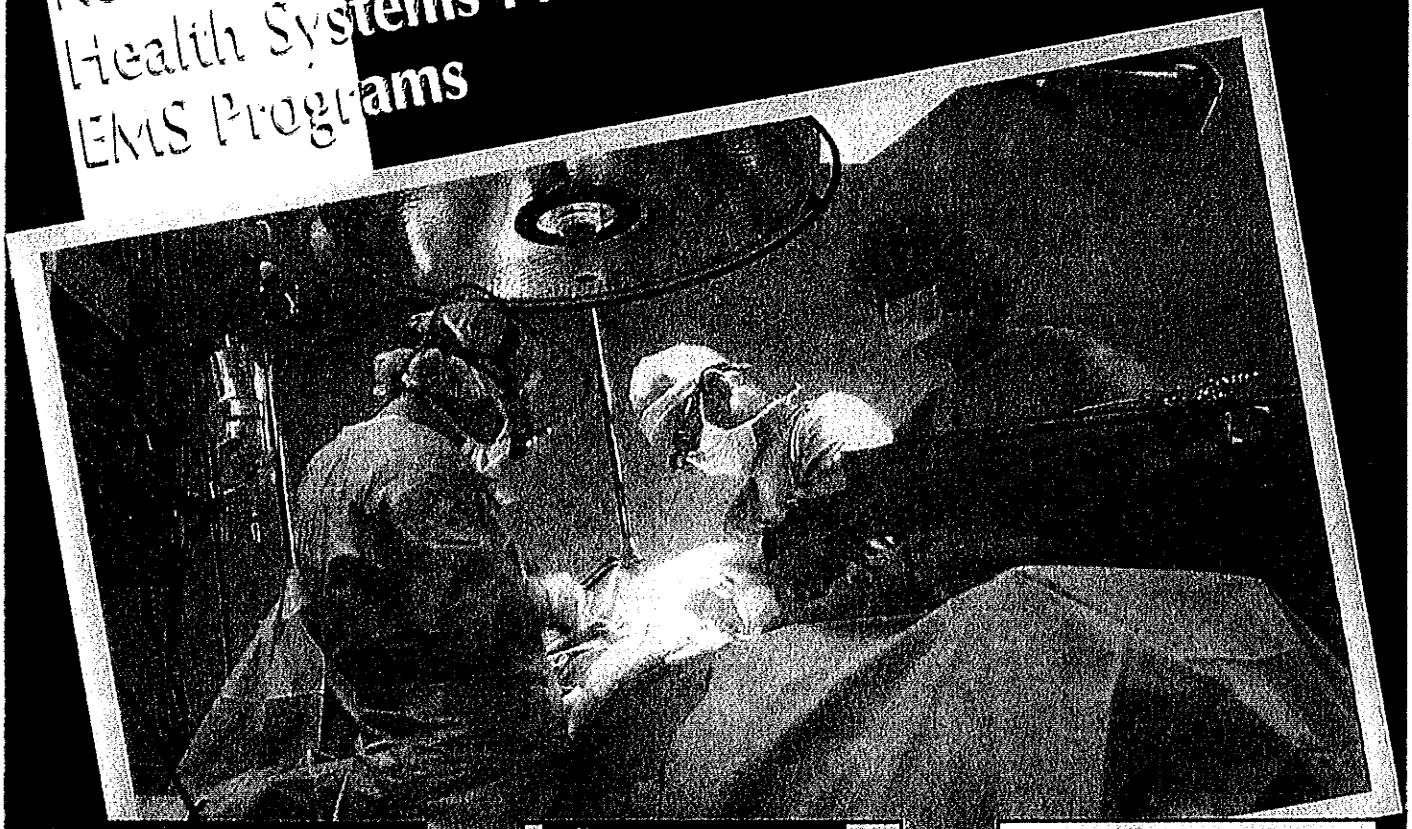
Nebraska Department of Health
Health Systems Planning and Development,
EMS Programs



Statewide Trauma System

A Report From the State Trauma System Development Board

August 1996

REPORT

FROM THE

NEBRASKA TRAUMA SYSTEM

DEVELOPMENT BOARD

STATE OF NEBRASKA

"Statewide Trauma System: A Report From the State Trauma System Development Board"

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TABLE OF CONTENTS

I. Letter from the Chair 9

II. Preface 11

III. Introduction 14

IV. Trauma System Care Regions 15

V. Leadership 17

Personnel Responsibilities 22

VI. Advisory Committees 23

Board Membership 23

VII. System Development 25

VIII. Legislation 27

IX. Administrative Rules 28

Policies & Procedures 28

X. Finance 29

Trauma System Administrative Costs 30
Trauma System Provider and Facility Costs 31

PUBLIC INFORMATION AND PREVENTION 34

XI. Trauma Prevention, Public Information, Training and Education 36

Elected Officials 36
High Risk Groups 37

XII. Interagency and Private Sector Collaboration 38

Assessing What's Out There 38
State, City and Local Agencies 39
Safe Communities 39
NETS Coordination 40
Nebraska Injury Prevention Coalition 40
Professional Associations 41
Insurance Coalition 41

XIII. Pediatrics and Trauma 42

EMSC Grant and Assessment 42
EMS Assessment 43
Training with Fire, Police, Ambulance Services, First Responders and Hospitals 43

TRAUMA MEDICAL DIRECTION 47

XIV. Statewide and Regional Trauma Management 48

XV. Local Medical Direction 52

PREHOSPITAL 56

XVI. Statewide Standards 57

XVII. Training and Continuing Education 60

XVIII. Data Collection 61

XIX. Certification Process 63

COMMUNICATION, TRANSPORT & TRIAGE 68

XX. Communication and Transport 69

XXI. Statewide Coordination of Emergency Services 71

Tiered Response 72

XXII. Interfacility Transfers 73

XXIII. On-line Medical Direction 77

DEFINITIVE CARE 79

XXIV. Trauma Care Facilities 81

Basic Trauma Center 82
General Trauma Center 82
Advanced Trauma Center 83
Comprehensive Trauma Center 83
Rehabilitation Center 84
Specialty Centers (Pediatrics and Burns) 84

XXV. Designation Process 85

Access 85
Quality 86
Viability 86
Cost 86
Outreach 87

XXVI. Medical Rehabilitation 89

Basic Rehabilitative Care 89
General Rehabilitative Care 90
Advanced Rehabilitative Care 90

EVALUATION 95

XXVII. Data Collection and Evaluation 95

The State Trauma Registry 95

XXVIII. Data Collection and Evaluation by Congressional District 99

XXIX. Trauma System Evaluation 99

Statewide and Regional Quality Management 100
Trauma Center Evaluation 101
Trauma Care Research 102
Release of Confidential Information 102

TRAUMA REGIONS 104

XXX. Description of Trauma Regions 106

XXXI. Legislative Issues 108

System Development 108
Evaluation 110
Definitive Care 110
Prehospital 111
Supporters of the Plan 111
Potential Opposition to the Plan 112

XXXII. List of Acronyms 113

INDEX OF FIGURES

Fig. 1	EMS Trauma Flowchart	19
Fig. 2	Statutes Governing EMS Personnel	27
Fig. 3	State of Nebraska Prehospital Trauma Triage Procedures	70
Fig. 4	Standard Terminology Relating to Emergency Medical Services	73
Fig. 5	State Trauma Registry Minimum Data Set	97
Fig. 6	NARSIS Patient Encounter Forms	98
Fig. 7	Statutes Governing Confidentiality of Trauma Registry Data	102
Fig. 8	EMS Regions Map	107
Fig. 9	Proposed Trauma Regions Map	107
Fig. 10	Existing Trauma Centers Map	App
Fig. 11	Auto Accidents By Gender & Age: Alcohol Related Deaths	App
Fig. 12	Auto Accidents By Age & Gender: Killed	App
Fig. 13	Auto Accidents By Gender & Age: Injured	App
Fig. 14	Total Auto Accidents By Gender & Age: Alcohol Related Injuries Only	App
Fig. 15	Number of Ambulance Runs By County During 1995	App
Fig. 16	Ambulance Run Types 1995 (NARSIS)	App
Fig. 17	Patient Assistant Breakdown (NARSIS)	App
Fig. 18	Disposition of Patient (NARSIS)	App
Fig. 19	Reason for Not Transporting (NARSIS)	App
Fig. 20	Northeast Region Services Map	App
Fig. 21	Western Region Services Map	App
Fig. 22	West Central Region Services Map	App
Fig. 23	South Central Region Services Map	App
Fig. 24	North Central Region Services Map	App
Fig. 25	Metro Region Services Map	App
Fig. 26	Southeast Region Services Map	App
Fig. 27	Trauma Enabling Legislation, LB 1223	App
Fig. 28	Acute Care Facilities	App
Fig. 29	Nebraska Department of Health Flowchart	App

INDEX OF TABLES

Table 1	Trauma System Budget	29
Table 2	Emergency Medical Personnel & Services by County	App
Table 3	Nebraska Hospitals and Corresponding Counties	App
Table 4	Incidence and Severity of Traffic Crashes	App
Table 5	History of Alcohol-Related Traffic Enforcement and Crashes	App

ADDITIONAL REPORTS AND LITERATURE

1. Heilig Needs Assessment Report
2. Fitch Evaluation of State EMS Program
3. ASTM Guidelines, 1149-93
4. Academy of Pediatric Guidelines

Special acknowledgments to:

The Trauma Systems Development Board

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I. Letter from the Chair

Dear Mr. Speaker and Members of the Legislature:

Trauma causes Nebraskans more years of life lost than all other diseases combined. Nationally, the cost of trauma, disability and premature death exceeds 100 billion dollars per year. Each year, over 8,000 Nebraskans will become victims of traumatic and potentially disabling injuries caused from auto injuries. Clearly, something must be done.

The most cost effective way to reduce accidental death and disability is to establish a statewide trauma system. Research shows conclusively that a statewide trauma system reduces morbidity and mortality, saves money and provides continuity of care for everyone.

Therefore, we propose an integrated trauma care system which will incorporate every healthcare provider or facility in the state. The goal of an inclusive system is to match each patient's needs to the resources of the facilities from the activation of the EMS system until their return to home.

Recognizing the diversity and vast area of our state, we propose a statewide system based upon regionalized care. There will be statewide standards that regions may modify to reflect their unique needs. An integrated trauma system provides care and gathers data in order to achieve continuous quality improvement.

Many individuals have volunteered numerous hours to develop this plan. They are experts in their fields and a highly dedicated group of Nebraskans who want to see the best quality care for their fellow citizens.

There are many reasons to adopt this trauma plan. Foremost, the cost of implementing the plan will be returned in reduction of cost from Medicaid/care, permanent disability, insurance premiums and most of all, loss of life.

Mr. Speaker and Members of the Legislature, I urge you to adopt this plan and create a Nebraska Trauma System. Your constituents will thank you.

Sincerely,

Dr. Robert Harry
Chair, Nebraska Trauma System Development Board

"Trauma is a preventable disease..."

II. Preface

Trauma is a preventable disease. There have been many advances in health care yet, the battle to reduce traumatic injury has seen only limited success. Three major factors account for this:

1. The medical specialty of emergency medicine and trauma care is relatively new. The concept of triaged care was developed during the Vietnam conflict. There is much to be learned about traumatic injury.

2. Injury prevention, which is the best weapon (and most cost effective), in the fight against trauma suffers from a lack of funding, primarily because most Americans don't know that accidents can be prevented. Through efforts such as consumer education and product changes to personal behavior modification, prevention is the most effective means for reducing the occurrence of trauma.

3. The development of a trauma care system assures that resources are available and infrastructure is in place to deliver the "right" patient to the "right" facility, in the "right" amount of time, regardless of their ability to pay.

Approximately forty percent of all trauma deaths occur within hours of the injury, usually from shock and/or internal bleeding. Most of these deaths are considered avoidable and would not occur if an

organized trauma system were in place.

Nebraska is continuing its tradition of being in the forefront in confronting this critical healthcare issue. In line with the *Nebraska Year 2000 Health Goals and Objectives* initiative, the Legislature adopted the 1994 bill which called for the development of a comprehensive, statewide trauma care system. A Trauma System Development Board was created, members were appointed and this plan is the result.

The Nebraska Department of Health's *Strategic Plan for Public Health for Fiscal Years 1998-1999* highlights the nine goals of the Department of Health. Eight of the nine goals are achieved within this plan:

- Decrease the morbidity and mortality from diseases, **injuries** and **disability**.
- Increased the use of health **data** and **information** in policy development, program planning, and evaluation.
- Reduce the risk to the public from hazards in the **manmade** and natural **environments**, housing and food.
- Work with communities in developing **effective integrated systems** of health care which are based on meeting identified needs.
- Establish and implement acceptable standards for **quality of health care** services.
- Improve the **efficiency and effectiveness** of public health operations.

- Increase the **public and key stakeholders' understanding of public health issues.**

- Increase access to health care by:

  a) Improving access to primary health care services in medically underserved areas.

  b) **Improving access to affordable health care services for the underinsured.**

"Trauma is a severe health problem in the state of Nebraska and a major cause of death."

III. Introduction

Trauma is defined as a major single or multi-system injury requiring immediate medical or surgical intervention or treatment to prevent death or permanent disability:

- Trauma is a severe health problem in the state of Nebraska and a major cause of death.
- Presently, trauma care is very limited in many parts of the state, particularly in rural areas where there is a growing danger that some communities may be left without adequate emergency medical care, and,
- It is in the best interest of the citizens of Nebraska to establish an efficient and well-coordinated statewide trauma care system.

Such a system would make the delivery of trauma care cost effective, reduce the incidence of inappropriate or inadequate trauma care, prevent unnecessary suffering, and reduce the personal and societal burden resulting from trauma. The goals and objectives of this trauma care system include:

- Conduct trauma prevention activities to decrease the incidence of trauma

- Provide optimal care for the trauma victim

- Prevent unnecessary death and disability from trauma and emergency illness, and,

- Contain costs of trauma care through a trauma system.

Trauma Care Regions.

IV. Trauma System Care Regions

In order to provide the highest quality trauma care, the trauma system must be administered from a regional level. These regional programs would identify their area's own needs, and develop regional-specific strategies for addressing those needs.

Nebraska based its trauma plan upon the Federal "Model Trauma Care System" plan. The Federal model provided a broad overview of the components of a trauma care system. It also strategically positions the State for participation in future federal programs, and simplifies state-to-state trauma system comparisons.

Per the Federal model, this plan is divided into two broad categories, each with several subcategories:

Administrative Components

- Leadership
- System Development Legislation
- Finance
- Definitive Care, and,
- Evaluation

Operational and Clinical Components

- Public Information/Education and Prevention, and,
- Prehospital

"The Nebraska Department of Health will be the Lead Agency."

V. Leadership

State Authority and Responsibilities

Legislative authority should establish a statewide EMS and trauma care system, with a Statewide Trauma Board. The Department of Health, EMS Programs (hereinafter referred to as Department or State) will be the Lead Agency and will be responsible for implementing and revising the state trauma plan. Figure 1 shows the regional flow chart of responsibility. The Department should address the following four areas:

- Training, Licensing, and Certification
- Education and Regional Support
- Prevention and Systems Analysis, and,
- Trauma Service Systems Development

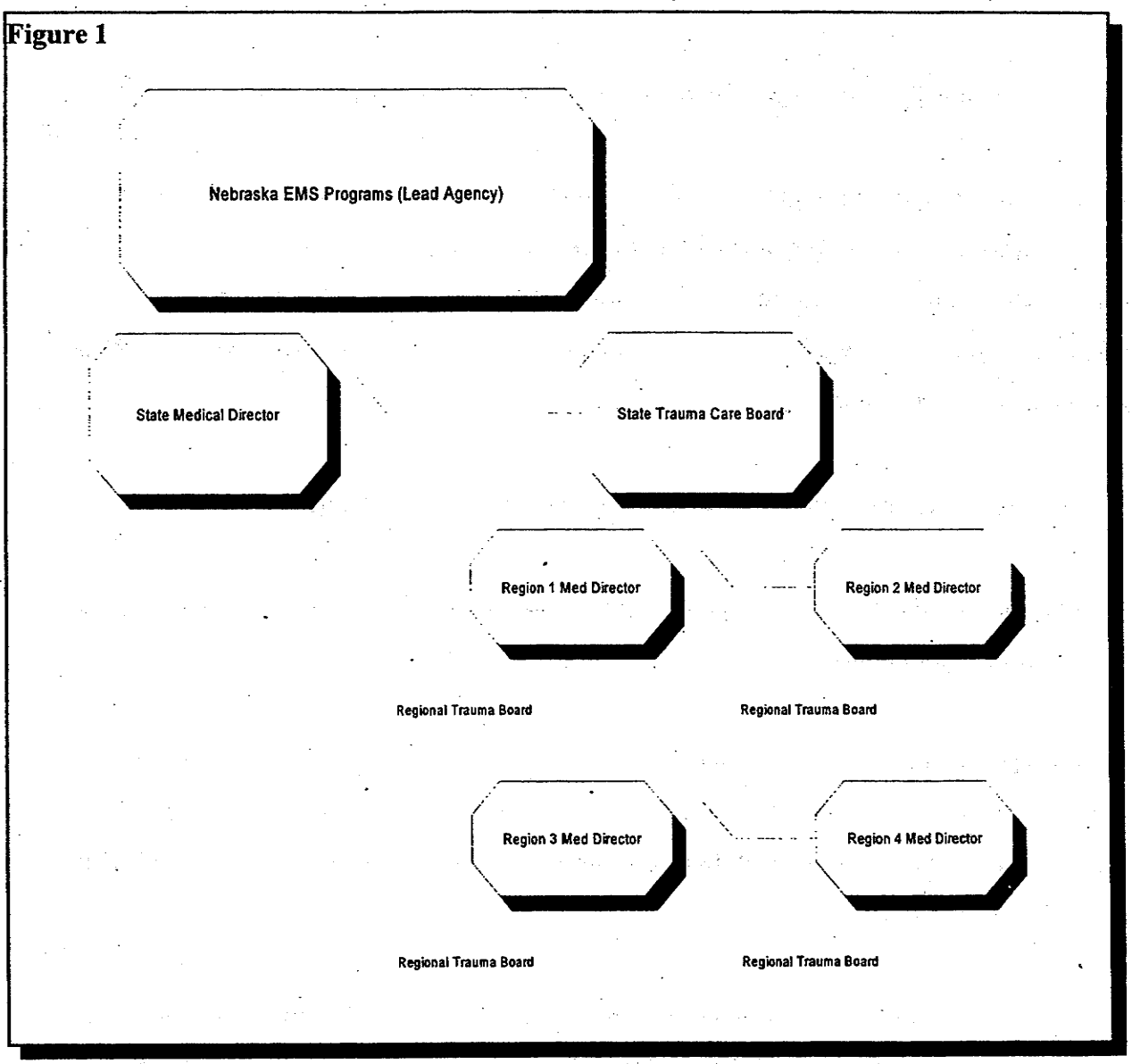
The function or task in each of these areas are:

Training, Licensing, and Certification - This area works actively with the state Trauma Board, the Regional Trauma Boards, and many other health care organizations to bring quality training to trauma care responders.

- Establishes standards for conducting trauma education and training programs

- Develops and/or adopts training manuals, curriculum, and other educational materials
- Develops and monitors contracts for trauma training programs for the regions
- Develops and implements minimum standards through a central authority
- Appoints State and Regional Medical Directors
- Develops innovative programs to meet the needs of out-of-hospital providers in unique settings
- Develops and enforces rules, regulations and standards, for licensing and inspecting of pre/out-of-hospital trauma services, and the certification of personnel providing emergency trauma care
- Staffs and consults with the Trauma Board
- Develops and administers examination standards for certification and recertification of trauma personnel
- Certifies trauma personnel who pass examinations approved by the Department
- Recertifies trauma personnel upon proof of continuing satisfactory performance, education, and testing.

Figure 1



- In conjunction with the State Trauma Board, prescribes minimum standards defining the duties and responsibilities of Medical Directors

- In conjunction with the State Trauma Board, approves Medical Directors and their physician delegates

- Administers corrective action as needed for certified personnel and licensed services.

- Verifies capabilities of licensed agencies to provide trauma care services.

Education and Regional Support - Provides technical assistance to the regional Trauma Board in the development of regional trauma plans; Assists in providing and evaluating trauma continuing education programs; Provides technical assistance in regional system development and implementation activities; Develops and monitors contracts for trauma continuing education programs for the regions, and,

- Develops innovative programs to meet the needs of pre/out-of-hospital providers

- Provides outreach, public education, support and technical assistance to rural and Native American communities

Prevention & Systems Analysis - Monitors and analyzes the trauma system; surveys the incidence and causes of trauma; provides an information resource for research, education, continuous quality improvement activities; identifies and promotes injury prevention activities. Specifically, this section:

- Provides leadership and technical assistance in establishing an information system which allows designated trauma centers, verified out-of-hospital providers, and Regional Quality Improvement Programs to assess quality of care and patient outcomes

- Provides technical assistance in the development, application and maintenance of a state trauma data collection system

- Monitors and analyzes the efficiency, effectiveness, costs and needs of the Trauma Care System

- Provides information to monitor compliance with the state and regional standards for trauma systems

- Facilitates the creation of each region's annual prevention strategic plan

- Conducts research on the trauma incidence, prevention and care

- Functions as an information clearinghouse and resource for trauma data

- Establishes and maintains the state trauma registry and other information on trauma

- Provides technical support to Regional Trauma Boards for planning and needs identification

- Provides technical assistance and support to Regional Trauma Boards in developing community injury prevention and public education programs

- Trauma Service Systems Development - Facilitates the development of a State system for efficient and effective delivery of Trauma Care services. Specifically, this section:

- Provides technical assistance and consultation to hospitals and health care facilities on the process for designation
- Manages the process by which hospitals and other health care facilities apply to provide specified levels of service

- Coordinates on-site reviews
- Manages the process for designating hospitals and other health care facilities
- Issues ambulance, first responder service and vehicle licenses to services who meet minimum standards; Conduct inspections of licensed services and vehicles
- Investigate complaints against agencies or individuals
- Provides workshops to hospitals on the role of designated facilities.

Personnel Responsibilities

- The field staff would be responsible for staff support to the Medical Director of their region. Activities would include but are not limited to:
- Organizing region board meetings and preparing the agenda, handouts etc.
- Processing expense reports for the members of their regions trauma board
- Preparing and distributing progress reports
- Providing technical support
- Assisting hospitals in their designation efforts
- Assist with training program
- Inspection of facilities
- Quality Assurance

"The Board reviews all administrative rules pertaining to licensing and certification, and advises the department."

VI. Advisory Committees

In addition to the State Health Department, a State Board should be established, by statute, to provide direction and oversight to the evaluation and function of the state's Trauma Care system.

The Trauma Board, appointed by the Department, has statutory responsibility to provide guidance and direction to the state in its development of the Trauma system. It will also review all existing rules, policies, and procedures and review and comment on all new rules, regulation, policies, or procedures proposed by the Department. The board reviews all administrative rules pertaining to licensing and certification, and advises the Department in other matters as requested.

Board Membership

The Board should consist of a representative from the American College of Surgeons, Committee on Trauma, American College of Emergency Physicians, American Academy of Pediatrics, law enforcement, Nebraska Emergency Services Communications Association (NESCA), Nebraska Medical Association, State Trauma Board Medical Director, Emergency Nurses Association, Nebraska Hospital Association, Trauma Nurse Coordinator, air ambulance provider, BLS and ALS ambulance services, public official, CARF Certified Rehabilitation Center, consumer, and all Regional Board Medical Directors. One member from the joint Board of Ambulance

Advisors and the Board of Advanced Emergency Care should sit as an ex-officio member of this Board and this Board should have a member sit as an ex-officio member of their Board. The Board should also have at least one member from each of the sub-committees of the Trauma System Development Board for the implementation portion of this plan to provide continuity and history of the plan.

State Boards responsibilities:

Trauma Care Procedures - The State Trauma Board has the responsibility to propose Trauma Care Procedures. They are defined as operating guidelines that identify the level of medical care personnel to be dispatched to an emergency scene. They include procedures for triage of patients, and determining which facility should first receive the patient. Trauma care procedures are developed in consultation with local Trauma Boards, emergency communication centers, the Medical Directors, and others involved in the Trauma system. The trauma care procedures must be consistent with minimum standards established by the Department. The Department shall adopt the trauma care procedures. Failure to comply with the standards, policies, and procedures established by the State Trauma Board and adopted by the Department may be grounds for disciplinary action.

Regional Trauma Care Board

The Regional Trauma Boards should be coordinated by the Department and will have the responsibility of carrying out the standards of the trauma plan. The regional Boards make-up will be identified by the State Trauma Board and the Department. Members will be appointed by the Department based upon recommendations from the State Trauma Board and local networks.

" This plan becomes the overall guidelines for more detailed operational planning at the regional level."

VII. System Development

Trauma system planning is an approach designed to build consensus along the way. Once reviewed, amended (if necessary) and adopted, this plan becomes the overall foundation for more detailed operational planning at the regional level.

The plan includes the following components:

- Needs Assessment
- Education and training
- Communications assessment
- Continuous Quality Improvement programs
- Prevention and Public Education activities
- Pre/Out-of-hospital services
- Acute and rehabilitative care facilities
- Pre/Out-of-hospital triage criteria
- Tiered Response
- Intra/inter-hospital transfer procedures, and,
- Recommendations and finances for implementation.

The plan can be envisioned as addressing four questions fundamental to a Trauma Care System:

1. What are the causes of trauma in the state and how can they be prevented?

2. Once a trauma injury occurs, is the trauma care system readily and efficiently accessible?

3. Once activated, is the system efficient and effective (i.e., the right personnel and appropriate equipment are arriving at the scene in a timely manner, triage is appropriate. and the victims are transported to the appropriate level hospital?)

4. What information/data is required to continuously evaluate and improve the system?

Statutes...

VIII. Legislation

The laws affecting Trauma are in separate statutes:

Nebraska Revised Statutes (N.R.S.) 71-5501 et.al. Sets standards and regulates certification of Advanced Life Support (ALS) personnel, and defines the duties and responsibilities of the Medical Directors;

N.R.S. 71-5101 et.al. Sets standards and regulates certification of Basic Life Support (BLS) personnel, and for licensure of out-of-hospital services and vehicles;

N.R.S. 71-7301 et.al. Sets standards and regulates certification of First Responder personnel, and for licensure of first responder services.

The Nebraska Trauma Act of 1994, establishes the Department as the State's lead Trauma agency.

Figure 2

71-5508. Certification of approved service program; application; qualifications; liability.
71-5509. Certified personnel; trainee; services permitted.
71-5510. Certified personnel; services permitted; supervision.
71-5511. Liability; limitations.
71-5512. Failure to obtain consent; liability.
71-5513. Emergency medical care; under supervision of physician or physician surrogate; liability.
71-5514. Certificate; issuance; conditions.
71-5514.01. Certification; qualifications.
71-5514.02. Training programs; approval.
71-5515. Certificates; reissuance; reinstatement.
71-5515.01. Certificate without examination; reciprocity.
71-5516. Violations; penalties.
71-5517. Certificate; disciplinary actions; grounds; hearing; appeal.
71-5518. False information; violation; penalty.
71-5519. Transferred to section 71-5501.01.
71-5520. Services authorized.
71-5521. Department; rules and regulations; standards; procedures.
71-5521.01. Department; examinations; requirements.
71-5522. Transferred to section 71-5514.01.
71-5523. Act, how construed.

71-5501. Legislative intent. The Legislature hereby finds and declares that there is a shortage of professionally trained medical and nursing personnel for the delivery of fast and efficient advanced emergency medical care for the sick and injured at the scene of an injury and during transportation to a health care facility, and that improved advanced emergency medical care is required to reduce the mortality rate during the first critical minutes immediately following an accident or upon the onset of a serious physical condition, such as an acute myocardial infarction. The Legislature further finds and declares that legislation is required in order to authorize and provide effective, practical, and economical delivery of advanced emergency medical care.

Source: Laws 1977, LB 138, § 1.

71-5501.01. Act, how cited. Sections 71-5501 to 71-5523 shall be known and may be cited as the Emergency Medical Technician-Paramedic Act.

Source: Laws 1977, LB 138, § 19; Laws 1983, LB 254, § 18; Laws 1987, LB 473, § 57; R.S.Supp.,1988, § 77-5519; Laws 1989, LB 569, § 27.

71-5502. Terms, defined. For purposes of the Emergency Medical Technician-Paramedic Act, unless the context otherwise requires:

(1) Approved licensed physician shall mean an individual who:

71-5149. Emergency medical technician-AM service; license; deny, refuse renewal, revoke, or suspend; grounds.
71-5150. Course sponsor; reinstatement.
71-5151. Certified emergency medical technician-IV; qualifications.
71-5152. Certified emergency medical technician-IV; competency evaluation.
71-5153. Certified emergency medical technician-IV; application.
71-5154. Certified emergency medical technician-IV; certificate; issuance; term.
71-5155. Certified emergency medical technician-IV certificate; renewal.
71-5156. Emergency medical technicians-IV; model protocol; training courses; minimum standards; department; duties.
71-5157. Emergency medical technician-IV instructor; approval; procedure; inspections and investigations; authorized.
71-5158. Emergency medical technician-IV service; license; application; contents; procedure.
71-5159. Emergency medical technician-IV service; license; deny, refuse renewal, revoke, or suspend; grounds.
71-5160. Course sponsor; reinstatement.
71-5161. Certified emergency medical technician-IV; procedures authorized; restrictions.
71-5162. Certified ambulance attendant; certain emergency medical technicians; certain instructors; certification; deny, refuse renewal, revoke, or suspend; grounds.
71-5163. Training course; deny, refuse renewal of, revoke, or suspend approval; grounds.
71-5164. Reinstatement of certificate, approval, or license.
71-5165. Rules and regulations.

(b) NEBRASKA TRAUMA SYSTEMS DEVELOPMENT ACT

71-5166. Act, how cited.
71-5167. Legislative findings and intent.
71-5168. Terms, defined.
71-5169. Nebraska Trauma Systems Development Board; created; members; chairperson; expenses; termination of board.
71-5170. Board; duties.
71-5171. Department; duties.

(a) EMERGENCY MEDICAL TECHNICIANS

71-5101. Legislative findings. The Legislature finds:

(1) That ambulance, rescue, prehospital emergency care, and basic life-support services are primary and essential health care services and that the presence of an adequately equipped ambulance and trained ambulance, rescue, prehospital emergency care, and basic life-support personnel may be the difference between life and death or permanent disability to those persons in Nebraska making use of such services in an emergency;

(2) That an effective emergency medical services system may be assisted by a program of training and certification of ambulance, rescue, prehospital emergency care, and basic life-support personnel and licensure of ambulance, rescue, prehospital emergency care, and basic life-support services approved by the board; and

(3) That sections 71-5101 to 71-5164 are essential to aid in advancing the quality of care being provided by emergency medical services in the State of Nebraska.

Source: Laws 1975, LB 418, § 1; Laws 1988, LB 1100, § 164; Laws 1989, LB 569, § 1; Laws 1992, LB 1138, § 21; Laws 1994, LB 1210, § 123.
Operative date July 16, 1994.

71-7301. Act, how cited. Sections 71-7301 to 71-7318 shall be known and may be cited as the First Responders Emergency Rescue Act.

Source: Laws 1992, LB 1138, § 1; Laws 1994, LB 1210, § 152. Operative date July 16, 1994.

71-7302. Legislative findings. The Legislature finds:

(1) That initial emergency medical care is an essential health care service and that the presence of trained first responder personnel may mean the difference between life and death or between complete recovery and permanent disability to those persons in Nebraska needing such services in an emergency;

(2) That an effective emergency medical services system may be assisted by a program of training and certification of first responders and licensing of first responder services approved by the board; and

(3) That the First Responders Emergency Rescue Act is essential to aid in the advancement in the quality of care being provided by emergency medical services in the State of Nebraska.

Source: Laws 1992, LB 1138, § 2.

71-7303. Terms, defined. For purposes of the First Responders Emergency Rescue Act:

(1) Automatic defibrillator shall have the definition found in section 71-5102;

(2) Basic life support shall mean those acts ordinarily performed by training by emergency medical technicians, including cardiopulmonary resuscitation and the use of oxygen, syrup of ipecac, pharyngeal airway, and pneumatic antishock garments, and not specifically preempted and separately licensed under the Emergency Medical Technician-Paramedic Act. Automatic and semiautomatic defibrillation under the licensing and certification procedures in rules and regulations adopted and promulgated by the department can also be done by basic life support personnel;

(3) Board shall mean the Board of Ambulance Advisors;

(4) Defibrillation shall have the definition found in section 71-5102;

(5) Department shall mean the Department of Health;

(6) Division shall mean the Division of Emergency Medical Services of the department;

(7) First responder shall mean a person certified by the department pursuant to section 71-7304 to locate and provide initial basic life support to patients at the scene of an emergency;

(8) First responder-A/D shall have the definition found in section 71-5102;

(9) First responder service shall mean any privately owned or publicly owned organizational entity the members of which are trained at the first responder level or higher to provide prehospital emergency care to patients at the scene of an emergency;

(10) First responder-A/D service shall have the definition found in section 71-5102;

Policies & Procedures...

IX. Administrative Rules

Development of Nebraska Rules and Regulations for carrying out Trauma legislation should include public input, in-depth reviews by the Department of Health, the Trauma Board, and formal public hearings.

Policies & Procedures

The Nebraska Department of Health policies and procedures for certification, licensure, and training list specific processes for those standard activities. In addition, detailed operational policies and procedures for local delivery of trauma care are contained in Trauma Patient Care Procedures, Medical Director Patient Care Protocols, local ordinances, and similar documents.

Dedicated financial support must be provided to fund the Trauma plan. Funding for education, for application, evaluation, maintenance and monitoring the Nebraska Trauma Plan and Trauma Registry.

X. Finance

TRAUMA SYSTEM BUDGET

General	Year One	Year Two
Rent	$2,500	$2,500
Postage	8,000	6,000
Telephone	3,000	4,500
Data Processing (Trauma Registry 1.5 FTEs)	50,000	50,000
Publications/Library		
Publishing and Printing	12,000	15,000
Dues and Subscriptions	500	250
Equipment		
Office Equipment	1,000	1,000
Communication Equipment	1,000	500
Equipment Repair	250	500
Supplies		
Office Supplies	1,500	1,000
Consultant Fees		
Legal Services	2,000	3,000
Travel Expenses		
Consultant Travel Expenses	800	1,200
Board and Lodging	2,000	4,000
Commercial Transportation	8,000	8,000
State Transportation	8,000	8,000
Personal vehicle mileage	15,000	15,000
Miscellaneous	1,000	1,000
Capital Outlay		
Purchase of Computer Hardware	10,000	5,000
Purchase of Computer Software	150,000	5,000

Personnel		
Trauma System Administrator and Staff Salaries & Benefits	60,000	60,000
State Medical Director	50,000	50,000
Regional Medical Director's	25,000	50,000
Designation	25,000	75,000
Training Education		
Hospital & Community Training, Public Information	62,500	62,500
Public Hearings	10,000	0
Staff/ATLS/TNCC/MTTU/PHTLS/BTLS	80,000	80,000
TOTAL COST	**$589,050**	**$508,950**
Anticipated Income		
Designation Fees	$15,000	$50,000
Federal Grants	40,000	0
General Funds	159050	0
Trauma ER Surcharge	375,000	500,000
TOTAL INCOME	**$589,050**	**$550,000**

Trauma System Administrative Costs

The costs of a trauma system are often divided into administrative (those incurred in the day-to-day system process), overhead costs, and direct patient-care costs. These Trauma System costs are so entwined it is difficult to discern one cost independent of the others.

Trauma funding generally come from the state's General Fund and from Federal Block Grants, making it subject to changes in the economy and putting it in competition with other state programs. Alternative dedicated funding sources need to be addressed. The TSDB has identified several types of funding scenarios as potential permanent funding:

- ✔ An insurance surcharges on Property and Casualty and/or worker's compensation.

- ✔ Lump sum fee per trauma patient. It has been proposed that a $250 flat fee be added to

each trauma patients bill to fund the Trauma Plan. In most cases this fee will be paid for by the patients insurance company.

- ✔ Voluntary contribution in the form of a foundation.

- ✔ General Fund dollars

- ✔ Surcharge on Alcoholic Beverage Sales or Tobacco. A small surcharge ($.01) be leveled on all alcoholic beverages and/or Tobacco products sold in Nebraska stores.

Trauma System Provider and Facility Costs

Prehospital - Prehospital care providers in Nebraska range from small rural fire districts providing First Response service with an all volunteer staff, to large metropolitan fire departments and ambulance services employing full-time, paid Paramedics and Emergency Medical Technicians. Consequently, costs for Prehospital service cover a full array of alternatives.

The cost of care and ambulance equipment is often a major problem particularly, for smaller agencies and especially for volunteer services. In addition to assuring that basic life support equipment needs are met, these agencies must also get advanced life support and communication equipment.

In some rural areas, helicopter service may be essential to ensure rapid transport to distant trauma facilities from either the scene or a Basic or General trauma facility. However, helicopter services cost over $1 million per year in staffing, operations, and helicopter rental. Moreover, third-party payers rarely provide adequate reimbursement for this service.

Hospitals - The establishment of a "trauma service" in a hospital requires an investment in professional staffing, participation in a trauma registry and quality improvement program. The costs for these ongoing operational functions vary by institution and depend upon the level of trauma service the facility is proposing to offer.

System Costs -Implementation and administration of trauma systems include start-up and ongoing costs. These costs include supporting the process of regional boards, designation of hospitals, managing systems analysis and development, managing data, regulatory activities, and prevention programs. State-supported training for administrators, pre/out-of-hospital and hospital providers is needed. In addition, communication systems and a trauma registry is necessary in a trauma system. These are ongoing costs of an effective trauma system and must be supported. These costs should be balanced against the cost to society if this system is not provided.

PUBLIC INFORMATION AND PREVENTION

"Trauma is preventable..."

XI. Trauma Prevention, Public Information, Training and Education

Problem Statement:

Trauma is preventable. Without an active Trauma Plan and educational campaign to inform Nebraskans of Trauma's preventability, Trauma will continue to be an escalating concern. Further, there are no informational programs to inform elected officials of the growing concern of Trauma Prevention, Training and Education in Nebraska.

Recommendation:

Devise a program that would educate elected officials of the leading causes of trauma and preventive measures that can be taken.

Elected Officials

Elected officials and influential community members need to be informed of the potential cost savings of trauma prevention. Simple measures such as seat belt usage have been shown to decrease fatalities by 40-50% and serious injuries by 40-60%. One study demonstrated that seat belt wearers required hospital admission 6.8% of the time versus 19.2% for non-seat belt wearers. Further, seat belt wearers had a 66% decline in hospital charges. (Department of Transportation).

Program: The Regional Trauma Systems will have a standardized elected official package that could include several current studies of successful trauma prevention programs, brochures of ongoing prevention programs and a "most-asked question" sheet. Prior to the elected officials training, the members of the Regional Board will be well trained (i.e., "train the trainer") concerning ongoing trauma prevention efforts and successful national and regional trauma prevention programs.

High Risk Groups

High risk groups in Nebraska are very diverse. They include the elderly and the very young who have higher morbidity from falls and are often victims of abuse. According to the Indian Health Service, the Native American population has been identified as having a higher rate of injury than any other race in Nebraska. This is due in part to their consumption of alcohol and other substances. Also, included in the high risk category are farmers.

Certain high risk groups are predisposed to trauma. Evidence collected over many years has shown a direct correlation between increasing blood alcohol concentrations (BAC) and the risk of motor vehicle accidents, falls, and domestic violence. The same correlation has been found with the use of illicit drugs.

Program: Initially, a definition of the problem should be determined and trauma prevention specialists should be identified. Collaboration with these specialists and coordination with community leaders should increase awareness and efforts in augmenting and expanding prevention programs.

"Collaboration between various agencies and private sector business involved in EMS is crucial."

XII. Interagency and Private Sector Collaboration

Problem Statement:

There is little collaboration between various agencies and private sector business involved in EMS. As a result, injury prevention and education is inefficient or repetitive.

Recommendation:

Form collaborative groups to share information and work in partnership to provide training and education for themselves and their community.

Assessing What's Out There

With a trend toward shrinking resources, the elimination of duplicative efforts would be an appropriate priority within the formation of any prevention program. With so many prevention efforts, the need to create new programs is rarely needed. Therefore, the creation of a list of existing injury prevention programs would be a useful addition to the prevention educator's resources. The Department's Injury Prevention & Control Program currently has a listing of volunteers and professionals throughout Nebraska that are involved in Injury Prevention on some level. While the list may never be complete, it is a good starting point for the completion of a guide to State prevention programs. Injury

prevention professionals and advocates could use the guide to obtain existing programs and materials, eliminating the time spent creating new programs.

State, City and Local Agencies

Interagency collaboration among law enforcement, fire and emergency responders in the areas of prevention, evaluation and long term solutions is essential. There are many state and community efforts, i.e., DARE, Junior Firestarters, etc., that could be linked to the efforts of law enforcement professionals. It isn't often that legal and medical professionals collaborate in prevention efforts whether urban or rural. Efforts to link these various groups through a newsletter etc., as well as collaborative effort in training and education is proposed.

The Uniform Report from the Nebraska Crime Commission and Social Services would be appropriate sources of statistics for these common traumas, i.e., MVC hand gun violence, domestic, child and elderly abuse. Sharing these statistics with Trauma Regions and the Trauma Advisory Board would be a first step toward a complete view of the complex problem of trauma. These same groups could help shape public support for the creation of laws that would be meaningful and enforceable. Expansion of the current training programs in First Response that the Sheriff's offices currently use, to other law enforcement agencies such as the city Police and State Patrol would be valuable. A tracking system for these statistics and reports of them should be combined with the statistics from the State Trauma Registry to create an accurate account of problem areas in Trauma. The conclusions of these reports would be utilized for Prevention, Education and Training Programs.

Safe Communities

The National Highway Traffic Safety Administration (NHTSA) is promoting the idea of "Safe

Communities" in Nebraska through the Nebraska Office of Highway Safety. The model of "Safe Communities" was initiated in Sweden where injuries were identified as a project for preventive health care. These programs are citizen-based, document the frequency and causes of injury, cover all ages and all injuries, design interventions to address high risk groups and are long-term (rather than short-term) in their focus. While these "Safe Community" initiatives will begin with an emphasis on traffic-related injuries, all priority injury issues should be addressed.

NETS Coordination

The State coordinated Network of Employers for Traffic Safety (NETS), sponsored by the Nebraska Office of Highway Safety and the Safety and Health Council of Greater Omaha, has established a network of participating member businesses and companies that have identified the need for traffic related injury prevention. Through a customized program, each business or company implements injury and trauma prevention programs to their employees. Utilizing this network can provide a mechanism to educate citizens at the local level about the State Trauma Systems needs and expectations.

Nebraska Injury Prevention Coalition

The Nebraska Injury Prevention Coalition (NIPC) currently consists of five task forces; Fire & Burn Prevention; Pedalcycle/Recreation Injury Prevention; Motor Vehicle related Injury Prevention; Poison Prevention, and SAFE KIDS. These task forces coordinate and carry out injury prevention activities across multiple agencies. This coordination of effort, and merging of resources create an efficient and effective mode of program implementation. This committee recommends the continuation of the NIPC under the direction of the NDOH Injury Prevention & Control Program.

Professional Associations

A critical component in the development of a state trauma system must be the identification, solicitation, and collaboration of health care and insurance related professional associations and their members. Providing the opportunity to involve those associations will enhance the efforts of education, legislation, and environmental change at both the local and state level.

Insurance Coalition

As one of the major fiscal beneficiaries, insurance companies should be strong partners in successful injury prevention activities. Reduction of severe and disabling injuries will result in lower expenditures for acute care and rehabilitation by insurance companies. While several companies in Nebraska have contributed to the cause on an individual basis, a joint effort would be more efficient and effective. Therefore, a consortium of these companies with other prevention groups such as HMO's would be of benefit both for public health and the private sector.

"Children are one of the highest risk groups for Trauma Injury. They have a higher mortality rate and their injuries are the most preventable."

XIII. Pediatrics and Trauma

Problem Statement:

In Nebraska, children are one of the highest risk groups for Trauma Injury. They have a higher mortality rate and their injuries are the most preventable. Currently Nebraska has no pediatric Trauma Plan. Further, there has not been a statewide EMS Assessment that would give an overall view of EMS in Nebraska.

Recommendation:

Perform a need's assessment of the entire State of Nebraska and create a workable plan for Pediatrics and Trauma. Assess what is currently available and how that information could work in conjunction with the overall plan.

EMSC Grant and Assessment

In 1994, 2,357 children between the ages of 0 and 14 were injured, sometimes fatally, due to motor vehicle related incidents. Of the children who were transported by area ambulance services and were reported to NARSIS 53.9 percent of injuries were trauma related and 28.1 percent were a result of medical emergencies. From 1990-1994, the leading cause of death for children 0-21 years was from motor vehicle crashes. (NARSIS Annual Report, 1994, Standard Summary of Nebraska-Motor Vehicle Traffic Accidents-

-Department of Roads)

Due to these alarming statistics Nebraska has applied for an Emergency Medical Services for Children (EMSC) planning grant. The first phase of this grant is to develop an assessment tool to survey all ambulance services, first responder teams, medical training institutions and hospitals. The survey results will allow the State to evaluate what types of training are available for Emergency Medical Technicians (EMTs), Nurses and Physicians. It will also identify prevention programs across the state and highlight the resources that are available in each community. Information obtained from this assessment will be provided to other organizations and agencies in order to collaborate with them to enhance prevention programs statewide.

An EMSC Advisory Committee will be established to develop a five-year Pediatric Plan.

EMS Assessment

Nebraska has initiated an EMS Assessment which will be facilitated by the Nebraska Office of Highway Safety and conducted by the National Highway Traffic Safety Administration (NHTSA). Public Education and Prevention are components of the Assessment. The results of the Assessment will assist the Trauma Board and subsequent regions in providing an accurate look at Trauma in the State.

Training with Fire, Police, Ambulance Services, First Responders and Hospitals

The information gathered from the EMSC survey and the EMS Assessment will enable the state to decide who, what and where prevention education programs need to focus statewide. With this information, EMS Coordinators, NIPC and the EMSC advisory Committee can begin to formulate a plan to increase awareness and begin making an impact to reduce injuries and deaths

among Nebraskans.

EMS Coordinators will assist the regional fire departments, ambulance services, first responder teams and hospitals to create prevention programs and prevention materials to distribute in their areas. Communities could get involved through the schools, EMS Week, Fire Prevention Week, Senior Centers, Girl and Boy Scouts etc.

Continuing education should be encouraged for ambulance services and emergency room personnel. The classes should include: Pre-Hospital Life Support, Basic Trauma Life Support, Pediatric Advanced Life Support, Advanced Trauma Life Support, Trauma Nurse Coordinator Core Course, Advanced Cardiac Life Support and other continuing education programs. Fire departments and ambulance services should be included as advocates for prevention and education.

TRAUMA MEDICAL DIRECTION

Trauma Regions...

XIV. Statewide and Regional Trauma Management

Problem Statement:

The State and Trauma Regions will need Management and Oversight.

Recommendation:

Designation of a Statewide Trauma System Administrator, Statewide Medical Director, and a Medical Director for each Trauma Region.

Discussion:

The NDOH shall designate a State Trauma System Administrator who, working in conjunction with the EMS Coordinators, will assist the State Medical Director and Medical Directors of the various regions in the setup and operation of each Trauma Region.

The Statewide Medical Director, who contracts with the state, is responsible for oversight and direction of the Regional Medical Directors. In addition, the Statewide Medical Director Chair's the Statewide Trauma Care Board. This individual shall have the following requirements:

- A Physician licensed in the State of Nebraska
- Practicing medicine in the Trauma Region in which they

serve as Medical Director

- ACLS certified.
- ATLS certified

Responsibilities include, but are not limited to:

- Work with the State Trauma System Administrator and the EMS Coordinators of the NDOH to set up and maintain the systems necessary to provide optimum Trauma Care in the State.
- Chair the State Trauma Care Board
- Provide leadership and lead discussion concerning Quality Assurance for the State
- Supervise Regional Medical Directors
- Review and update trauma protocols and statistics for the State
- Attend at least one meeting annually in every region.
- Supervise, consult with and provide guidance to the Regional Medical Directors
- Liaison with the Joint Board of Ambulance Advisors and the Board of Advanced Emergency Care

The Regional Medical Director, who contracts with the state, is responsible for the operation of the Trauma Region. This individual shall have the following requirements:

- A Physician licensed in the State of Nebraska
- Practicing medicine in the Trauma Region in which they serve as Medical Director
- ACLS certified.
- ATLS certified

Responsibilities:

- Work with the State Trauma System Administrator and the EMS Coordinators of the NDOH to set up and maintain the systems necessary to provide optimum Trauma Care in that Region.
- Review all incidents activating the Trauma System.
- Become actively involved in the training, inservice and review courses occurring in the Trauma Region.
- Annually review the Trauma Protocols of their Trauma Region.
- Annually review the statistics of their Trauma Region with the Trauma Systems Administrator of the NDOH.
- Assist the EMS responders, services and their Medical Directors in all aspects of trauma

care, to include, but not necessarily limited to, quality assurance, quality improvement, protocol writing and maintenance, run review and skill maintenance.

- Attend the meetings of the Regional Trauma Medical Directors and the State and Regional Trauma System Advisory Committees as may be necessary for the operation of the Trauma System.

"Each EMS Service and/or Service Unit, licensed through the State of Nebraska must have an active Medical Director."

XV. Local Medical Direction

Problem Statement:

Local Medical Direction is frequently absent or has poorly defined roles and responsibilities.

Recommendation:

Each EMS Service and/or Service Unit whose Service is licensed through the State of Nebraska must have an active Medical Director, whose salary is paid by the Service, and who shall:

- Review all trauma runs triaged, treated or transported by that Service.
- Review, assist or participate, as instructor or monitor, the training, in-service and review courses their Service uses.
- Annually review the Trauma Protocols of their Service unit
- Annually review the trauma statistics, including the outcome of their patients.
- Assist their Service in all aspects of trauma care, to include, but not necessarily limited to, quality assurance, quality improvement, protocol writing and maintenance, run review and skill maintenance.

- Implement the Regions Annual Prevention Plan.

Each Local Medical Directors shall:

- Be a Physician licensed in the State of Nebraska
- Practice in the same Trauma Region as the unit they serve.
- Be ACLS certified.
- Be ATLS certified.
- Along with the Trauma System Administrator, shall host or arrange regular meetings with each region's EMS Services Medical Directors and the Medical Director of that Trauma Region.

PREHOSPITAL

"Nebraska will be divided into designated Trauma Regions which will adhere to statewide standards."

XVI. Statewide Standards

Problem Statement:

There are no statewide standards in the prehospital arena. Therefore, there are varying levels of training and treatment of the trauma patient.

Recommendation:

The State of Nebraska will be divided into designated Trauma Regions which will adhere to statewide standards.

The Prehospital care system currently responds to trauma incidents as well as non-emergency medical situations. However, these systems are independent and lack coordination. As a result the patient is unlikely to receive the best available care. A centrally coordinated Trauma System would improve the response of the existing Prehospital components.

The Prehospital components consist of communication personnel, EMS (Emergency Medical Services) police and fire departments. The EMS services include First Responders, Emergency Medical Technicians--basic level (EMT), Intermediate level (EMT-I) and Paramedic level (EMT-P), including those EMT's with additional certifications.

First Responder units provide extrication, assessment, triage and basic stabilization of patients at the transfer site and/or while the ambulance is en route. First responders are trained using a forty (40) hour standardized curriculum from the Department of Transportation (DOT).

Basic life support services (EMT, EMT-A/D), provide extrication, assessment, triage, non-invasive, treatment, and transport. EMT's are trained utilizing a one hundred ten (110) hour DOT curriculum. EMT-A/D's Emergency Medical Technicians-Automatic Defibrillator has an additional eight (8) hours of training from the Nebraska standardized curriculum.

Advanced life support services (EMT-D, I, P) provide extrication, assessment, triage, non-invasive and limited invasive treatment and transport. All advanced EMT's complete the one hundred ten (110) hour basic DOT curriculum. Each of the following levels complete additional training; EMT-D (Emergency Medical Technician-Defibrillator--Manual) an additional sixteen (16) hours of Nebraska standardized curriculum. EMT-I's have an additional 360 Hours of DOT curriculum. EMT-P have an additional 806 Hours of DOT curriculum.

As of January 1996 the following number of personnel is licensed in Nebraska:

First Responders	175
Total EMT's	8,074
of this total	
EMT	5079
EMT-A/D	2258

EMT-D	272
EMT-I	126
EMT-P	339

(Source: The NDOH, Professional and Occupational Licensure.)

When a trauma incident occurs, the public activates the system via telephone or radio to notify a local EMS Service. The EMS Service goes to the scene, assesses and performs triage, treats and transports according to their level of certification. The Service generally transports to the nearest hospital, which is not always the most appropriate location for that patient. There, the trauma patient is assessed based upon the level of skills of the attending personnel and then is either treated or transferred to a hospital better equipped to handle the degree of injury.

The EMS System has evolved in the State of Nebraska. Over the last 30 years the EMS System has continued to upgrade the quality of trauma care delivered. The issue now is how to integrate the guidelines of the new Trauma Plan with the existing Trauma System.

Continuing Education...

XVII. Training and Continuing Education

Problem Statement:

Recruitment of, training of, and continuing education for Prehospital personnel is needed on an ongoing basis.

Recommendation:

Development of an ongoing program of recruitment, training and continuing education which would be coordinated by the Regional Coordinator and Medical Directors. The program would be structured by the Designated Trauma Centers, Advanced Life Support Training Agencies, and Emergency Medical Services.

Discussion:

Each Trauma Region, working in conjunction with the NDOH, the Medical Director of the Trauma Regions, the designated Trauma Centers, the educational institutions within its boundaries and/or serving its area, and the EMS Services and other providers across the state shall ensure adequate Training, Inservice and Review Courses for the trauma providers.

Status: Prehospital care providers in Nebraska range from small rural fire districts providing first response service with an all

volunteer staff, to large metropolitan fire departments and ambulance services employing full-time, paid EMT's of all levels. Consequently, the resources cover a full array of possibilities. As of the end of 1995, 92% of the state's Prehospital services were BLS certified. Eighty-three percent were all volunteer services and 17% were paid Prehospital services. (NDOH, Professional and Occupational Licensure Section) Volunteer personnel for the most part work at full time jobs and run fire and EMS calls on the side. This situation creates stress not only the EMT but their families, their employers, and their communities in many ways.

When activation occurs in a volunteer system, the response may vary considerably. However, despite its' limitations, the system works well. With limited funding available on a federal and state basis, the availability of education for new and current EMS prehospital care providers is inadequate.

Data Collection Evaluation...

XVIII. Data Collection

Problem Statement:

A system of data collection is necessary for quality control, medical review, research and if necessary, judicial and legal review.

Recommendation:

A system of data collection shall be established.

Discussion:

This data collection system shall:

- Ensure that copies are developed for 1) the initial managing Service, 2) the transporting Service and the initial destination, and 3) the Trauma Region.
- Provide data for routine run reviews.
- Provide data for ongoing and future trauma research, including epidemiological research.
- Have single entry capability for the capture of data. This will require establishment of computer systems and electronic data transfer.

- Utilize ICD-9 (or ICD-10 when appropriate) and E-code structure.

It is recognized that the current NARSIS form is a valuable tool. but will need modifying to meet the above criteria.

This data collection system is needed to support a Statewide Trauma Registry, it must be of adequate scope to provide a basis for evaluation of trauma care and trauma research.

Certification Standards...

XIX. Certification Process

Problem Statement:

A system of recognition of skills and training of individuals, both Prehospital and In-hospital, is necessary.

Recommendation:

Require the individuals, agencies, and vehicles involved in Trauma care to meet the EMS and ACS standards of certification (also included would be PHTLS, ATLS, etc.) All Prehospital personnel should be provided with airway management training.

Discussion:

All vehicles used to transport trauma victims shall meet the laws and regulations of the Advanced Emergency Medical Care Board and/or the Board of Ambulance Advisors.

All personnel involved in the organized response to Trauma shall be certified by the State of Nebraska under existing laws.

An EMS Service may be designated as Certified Basic Trauma Transport Service or Certified Advanced Trauma Transport Service

- if it meets a standard response time criterion.

- has 24 hours, seven days a week, coverage by Prehospital Trauma Life Support trained personnel if it is ALS, or BTLS and if it is a BLS Service

- if it has additional trauma equipment, including pediatric equipment. This equipment will be designated by the NDOH, and,

- have been trained in airway management and control.

The designation of a Certified Trauma Transport Service is voluntary and displays a level of expertise that may be achieved by EMS Services. The difference between Basic and Advanced is the certification level of the Service, BLS or ALS.

COMMUNICATION, TRANSPORT & TRIAGE

"The State shall have Protocols for communication, triage and treatment."

XX. Communication and Transport

Problem Statement:

Without coordinated protocols of actions concerning communication, transport and transfer, medical direction will continue to be chaotic and may result in long term disability or loss of life.

Recommendation:

The establishment of Statewide Protocols for treatment of trauma patients activating the Trauma System. The allowance of regional modifications, after approval from the State Trauma Board.

Discussion:

The State shall have Protocols for communication, triage and treatment. These protocols shall integrate both ALS and BLS approaches, and shall include:

- Access to the system (i.e., 911)
- Immediate response to notification of incident (i.e., central dispatch)
- Pre-scene operations to include level of response

- On scene operations and treatment. The Medical Incident Command System is *strongly* encouraged

- Transport protocols from scene to nearest appropriate facility and interfacility transport, if needed

- Data collection to include statistical compilation with an interface to the statewide Trauma Registry.

Protocols shall be compatible with the Laws and Regulations of both the Board of Advanced Emergency Care, and the Board of Ambulance Advisors. Also, Nebraska statewide and local Emergency Operations and Disaster Plans shall be integrated into these protocols.

Figure 3

STATE OF NEBRASKA
PREHOSPITAL TRAUMA TRIAGE PROCEDURES

ehospital assessment of injured patients for triage is based upon the following 4 steps. Presence of any factors listed in Step 1 or Step 2 require activation of the Trauma System. Activation of the Trauma System may also be indicated for patients presenting only the factors listed in Step 3 or Step 4, following consultation with medical control.

STEP 1

VITAL SIGNS AND LEVEL OF CONSCIOUSNESS

	Adult	Pediatric (<6)
•Shock:	Systolic Blood pressure <90; or	BP<9-; HR. 120
•Respiratory Distress*:	Respiratory Rate <10 or >29; or	Same
•Altered Mentation:	Glasgow Coma Score (<14)	Same

*If prehospital personnel unable to effectively manage airway, consider rendezvous with ALS unit or nearest appropriate facility.

YES → **ACTIVATE TRAUMA SYSTEM**

1. Take patient to the highest level trauma center within 30 minutes via ground or air transportation.*

2. Consider Inter-hospital transfer criteria from Level II-V or non-trauma centers.

3. Note activation of Trauma System in Registry/Quality Assurance data-base.

NO ↓

STEP 2

ASSESS ANATOMY OF INJURY

- Penetrating injury of head, neck, torso, groin, or
- Combination of burns; involving face or airway; or
- Amputation above wrist, ankle; or
- Spinal Cord injury; or
- Flail Chest; or
- Two or more obvioius proximal long bone fractures

YES →

NO ↓

STEP 3

ASSESS BIOMECHANICS OF INJURY**

- Ejection of patient from enclosed vehicle; or
- Auto-pedestrian/auto-bicycle injury with significant (>5 mph) impact
- Pedestrian thrown or run over
- Motorcycle crash >20 mph or with separation of rider from bike

→ **CONSULT MEDICAL CONTROL**

NO ↓

STEP 4

CONSIDER THE FOLLOWING**

A. Paramedic "gut feeling" of injury severity

B. Co-morbid factors

- •Extremes of age (<12 and>60 years of age)
- •Hostile environment (such as extremes of heat or cold)
- •Medical illness (such as COPD, CHF, renal failure, etc.)
- •Presence of intoxicants/hazardous material
- •Second/third trimester of pregnancy

C. High energy transfer situation

- •Rollover
- •Falls >20 feet
- •Extrication time >20 minutes

D. Burn Injury

- •2nd and 3rd degree burns of face, hands, feet, perineum
- •Significant electrical burns
- •Closed space fire (inhalation)

These criteria should cause a high index of suspicion that the patient may have sustained a severe injury. Consultation with medical control is recommended to assist in the decision to activate the trauma system for these patients. **REGARDLESS, all patients who met these criteria must be entered into the Registry/Quality Assurance Data system.

"Emergency Medical Dispatch Centers and 911 Systems."

XXI. Statewide Coordination of Emergency Services

Problem Statement:

Currently there are no statewide provisions for coordinated, appropriate access or dispatch for emergency services.

Recommendation:

Establishment of Emergency Medical Dispatch Centers and 911 Systems.

Status of communication system:

The communication system within Nebraska varies greatly from region to region depending upon financial and personnel resources. As of 1993, sixty-four (64) percent of the state is covered by 911 communication. Thirty-six (36) percent of the dispatch centers within the state have Emergency Medical Dispatch Training (Heilig Report on Trauma in Nebraska, 1995.) Activation of a "trauma system" is currently possible in only a few areas of the state.

Discussion:

Each Trauma Region will have an Emergency Central Dispatch structured according to the recommendations of the DOT. This Dispatch may be a currently operating medical dispatch contracted

to provide on-line dispatch and contact with on-line medical control for the Trauma Region. It need not be in the Trauma Region it serves, but shall have a contractual relationship with each region it serves. Ongoing physician direction, management and review shall be an integral part of its operation. All dispatchers shall have completed the appropriate training. The dispatch shall have in its possession a current listing of EMS responders, levels of certifications and each potential transport destination's levels of staffing and equipment. The dispatch shall have reliable communication links to all EMS responders and transport destinations (usually, but not necessarily, a hospital) throughout the State.

One of the responsibilities of the Trauma System Board is to encourage the establishment of 911 and E-911 system throughout the state.

> It is to be recognized that several of the telephone systems in the State of Nebraska are not yet capable of supporting 911, so efforts must be made to improve these systems.

Tiered Response

Tiered Response is defined as:

> The assignment, according to local protocols, of emergency medical resources with varying levels of care capability to the scene of an illness or injury based on information received from previously arrived, medically trained, on-scene responders. A sequential response differs from a simultaneous response. (ASTM F1177)

When prehospital personnel are treating and transporting a trauma patient, it is required that the patient receive the highest level of appropriate care available. The appropriate level of care will be determined by established regional protocols or by the on-line medical director. This mandates that out-of-hospital providers participate in "sequential or simultaneous response" as

defined by the State Trauma Committee. If a service provider fails to request or provide the appropriate response, the run shall be reviewed by the Regional Medical Director. Failure to participate in appropriate response to patient care may result in licensed service and individuals becoming subject to disciplinary action by the State.

Figure 4

Standard Terminology Relating to Emergency Medical Services[1]

This standard is issued under the fixed designation F 1177; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This standard is intended to provide standard definitions of terms which apply to all F-30 standards but which are more precise than common usage.

2. Terminology

2.1 Appropriate definitions for interpretation of terms used in ASTM Emergency Medical Services standards shall be determined in the following order:

2.1.1 Specific definitions of terminology or description of terms provided in the standard. These will apply to use of the term in that standard only.

2.1.2 ASTM Standard Terminology Relating to Emergency Medical Services (Standard F-1177).

2.1.3 Taber's Cyclopedic Medical Dictionary, 16th Edition (Philadelphia: F. A. Davis Company, 1989).

2.1.4 Mosby's Emergency Dictionary (St. Louis: C.V. Mosby Company, 1989).

2.2 *Definitions:*

advanced life support—medically accepted life sustaining, invasive or non-invasive procedures; provided at the detection of a physician or other authorized health care provider.

ambulance—a vehicle for transportation of the sick and injured, equipped and staffed to provide emergency medical care during transit.

ambulance service—a qualified provider of medical transportation for patients requiring treatment and/or monitoring due to illness or injury.

basic life support—medically accepted non-invasive procedures used to sustain life.

call rotation—a system in which emergency medical responses are allocated sequentially to multiple providers.

clinical medical practice—patient diagnosis and treatment, including treatment protocols, which are the purview of qualified professionals (as determined by the state or other appropriate authority).

definitive care—a level of therapeutic intervention capable of providing comprehensive health care services for a specific condition.

delegated practice—the medical activities of providers performed under the authority and direction of a licensed physician.

direct medical direction—the process of providing immediate physician orders to EMS personnel through direct communication (a.k.a. on-line medical direction).

dispatch life support—the knowledge, procedures, and skills used by trained emergency medical dispatchers in guiding care by means of post-dispatch (pre-arrival) instruction to callers.

EMS region—a defined geographic area used for EMS planning, development, and coordination.

emergency medical facility—a physical structure, excluding mobile vehicles, which has been approved by the appropriate regulatory authority to receive emergency patients and which is equipped and staffed to evaluate and treat patients with life threatening conditions.

emergency medical services (EMS) system—a coordinated arrangement of resources (including personnel, equipment, and facilities) organized to respond to medical emergencies, regardless of the cause.

emergency medical services—the provision of services to patients requiring immediate assistance due to illness or injury, including access, response, rescue, prehospital and hospital treatment, and transportation.

health care provider—an organization, institution, or individual authorized to provide direct patient care.

indirect medical direction—the physician management of all clinical aspects of an EMS system, including but not limited to planning, training, implementation, and evaluation (a.k.a. off-line medical control).

medical direction—physician responsibility for the development, implementation, and evaluation of the clinical aspects of an EMS system.

medical director—off-line—a physician responsible for all aspects of an EMS system dealing with the provision of medical care (also known as System Medical Director).

medical protocol—pre-established physician authorized procedures or guidelines for medical care of a specified clinical situation, based on patient presentation (a.k.a. standing orders).

medical transportation services—the moving of patients from one location to another. Specific services include any or all of the following: emergency and non-emergency medical response and transportation; scheduled and non-scheduled interfacility transfers, medical standbys, long-distance medical transfers, air medical response and transport (helicopter and fixed wing aircraft); and stretcher and wheelchair transport services.

medical transportation system—a sub-system of the emergency medical services system consisting of an organization or collection of medical transport services which provide transportation, treatment, and observation of patients for a specific geographic area.

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[1] This terminology is under the jurisdiction of ASTM Committee F-30 on Emergency Medical Services and is the direct responsibility of Subcommittee F30.06 on Terminology.

Current edition approved October 15, 1993. Published July 1994. Originally published as F 1177 – 88. Last previous edition F 1177 – 93a.

mutual aid—the furnishing of resources, from one individual or agency to another individual or agency, including but not limited to facilities, personnel, equipment, and services, pursuant to an agreement with the individual or agency, for use within the jurisdiction of the individual or agency requesting assistance.

on-line medical physician—a physician immediately available, when medically appropriate for communication of medical direction to non-physician prehospital care providers in remote location.

prehospital emergency medical services—a sub-system of the emergency medical services system which provides medical services to patients requiring immediate assistance due to illness or injury, prior to the patients' arrival at an emergency medical facility.

sequential response—The assignment, according to local protocols, of emergency medical resources with varying levels of care capability to the scene of an illness or injury based on information received from previously arrived, medically trained, on-scene responders. A sequential response differs from a simultaneous response.

simultaneous response—The assignment of multiple emergency medical resources to the scene of an illness or injury based on initially available information and local operational policies. These may have varying levels of care capability (for example ALS and BLS, ground and air). Subsequent care and/or transportation of the patient is provided by the unit which most closely meets the patient's needs. A simultaneous response differs from a sequential response.

standing orders—a type of medical protocol which provides specific-written orders for actions, techniques, or drug administration when communication has not been established for direct medical direction.

trauma care system—a subsystem within the EMS system designed to manage the treatment of the trauma patient.

"Create protocols and levels of authority for Interfacility transfers."

XXII. Interfacility Transfers

Problem Statement:

There are no uniform protocols for Interfacility transfer for the State of Nebraska.

Recommendation:

Create protocols and levels of authority for Interfacility transfers.

Every hospital/facility in Nebraska which receives emergency patients shall be categorized in relation to criteria set forth in the hospital designation section of this plan. Every patient received by that Center shall be immediately evaluated in relation to criteria set forth in the Prehospital Triage section of this plan (which will assign severity levels according to predetermined combinations of clinical findings). The severity of the patient's illness or injury will dictate those management requirements. It shall be the duty of that facility to render immediate resuscitation and/or stabilization. They must transfer that patient promptly to a higher level facility in, *every case,* in which the severity of the illness or injury exceeds the resources or capabilities of the initial receiving facility.

The above requires that every facility not only know its' own practical limitations but also recognize how to match patient needs with the resources of other facilities (the purpose of designation) in

the most timely manner. To assure that this relationship is expeditious, transfer agreements will be defined in advance so that each hospital that is capable of accepting transfers from other facilities of lesser resources shall signify its willingness to do so.

- In order to assure a momentary state of preparedness to receive such a patient, the sending facility shall contact the receiving facility in advance. The receiving facility will accept the patient unless there are mitigating circumstances. For example; not enough available staff, too many trauma patients already at the facility etc.

- Communication between the sending and receiving facilities shall, whenever possible, be conducted between the most senior professional providers involved in the patient's management. Details of care rendered and tests performed will accompany the patient in written form.

- The optimal means of transport will be coordinated between the sending and receiving facilities. As a general guideline the receiving facility will contact the transporting agency in order to facilitate closure communication relating to clinical events occurring during transfer.

- In some cases a higher level facility which is nearest the patient injury pick-up site may be bypassed (based on capability, either permanent or momentary) in order to accomplish the most expeditious and appropriate definitive care. Likewise, the nearest facility may be bypassed when clinical circumstances indicate that a slightly longer transport time is justified based on the higher capability of the destination facility. All such decisions must be based on direct order by the On-line Medical Director or designee. In all circumstances of facility bypass, for whatever reason, there shall be a review by the medical director of the trauma region in which the respective case originated.

In no instance shall a potential source of payment be a factor in determining the facility to which or means by which transfer is made for any patient. Nor in the instance of the patient needing immediate and timely access to definitive care, shall the prehospital or hospital provider contact the patient's health care provider organization be consulted with in order to receive input or directions from them. When the patient has been stabilized, and it has been determined that the patient will incur no added risk, the receiving facility can contact the patient's contracted provider organization and shall cooperate in alternative care options as might be requested by that contracted provider organization and as deemed appropriate by the receiving facility. In the event of a disagreement between the parties the Medical Director of the trauma region shall be informed and a written report generated.

"Each Trauma Region will have reliable communication protocols and equipment for placing the On-scene Incident Commander in contact with the on-line Medical Direction."

XXIII. On-line Medical Direction

Problem Statement:

There is no consistent on-line medical direction from region to region for assisting and directing the work of the Prehospital personnel.

Recommendation:

Establish a system of on-line Medical Direction.

Discussion:

The on-line Medical Direction shall be structured as noted in the Paramedic Law and Regulations.

Each Trauma Region will have reliable communication protocols and equipment for placing the On-scene Incident Commander in contact with the on-line Medical Direction. This Medical Director, preferably, should be located in the Trauma Region, and have a contractual relationship with each Trauma Region they serve. On-line medical direction shall be available for all Service Programs.

DEFINITIVE CARE

"Nebraska will create a system for designating hospitals and clinics."

XXIV. Trauma Care Facilities

Problem Statement:

There are no statewide guidelines for designating Trauma Facilities.

Recommendations:

The State of Nebraska will create a system for designating hospitals and clinics. The American College of Surgeon's Committee on Trauma has established guidelines for trauma care, which serves as a benchmark, for developing trauma care services in many parts of the country. These guidelines, have been adopted as the starting points in Nebraska's development process. The designations of hospitals as Levels I, II, III, & IV Trauma Centers have been a benchmark for the following designation levels written by the Definitive Care Committee. The Definitive Care Committee has identified four levels of trauma facilities to provide the systems structure. They are: Basic, General, Advanced and Comprehensive. In addition, two other speciality designations exist; Pediatric Trauma and Burn Trauma. These speciality services have entry access from each of the four designation levels as their on-line Medical Controller deems appropriate. These speciality services will be categorized by their professional association governing body, i.e., American Academy of Pediatrics and American Burn Association.

Because, of the large number of rural communities in Nebraska, and in recognition of the significant role small rural hospitals and community clinics play, as the primary focal point for initial care,

Nebraska included the Basic level Trauma Center. The existence of this level provides an avenue for formally incorporating rural hospitals, clinics, and communities into the statewide trauma care system.

Each of these categories and levels of designation is integral to the statewide trauma system. Below is a brief description of their function and characteristics.

Basic Trauma Center

The role of the Basic Trauma Center is to stabilize, prepare and transfer all patients with potentially life threatening injuries.

These facilities are hospitals or medical clinics based in rural areas. They should have trauma trained physicians, physician assistants, or nurse practitioners available within 15 minutes, and basic equipment for resuscitation and stabilization. The hospitals involved at the basic trauma level may also provide some limited surgical intervention based upon expertise of available on-site staff. The hospital will provide trauma trained nurses within five minutes, physicians within 15 minutes, and will have personnel available for patient stabilization, as well as appropriate equipment and diagnostic capabilities.

General Trauma Center

The role of the General Trauma Center is to provide initial evaluation and stabilization (surgical if appropriate), to provide general medical and surgical inpatient service to those patients who can be maintained in a stable or improving condition without specialized care. They also need to prepare and transfer patients meeting predetermined criteria to Comprehensive or Advanced Centers.

The General Trauma Center will be physician directed within a formally organized trauma resuscitation team, and provides trauma trained physicians and nurses to the emergency department within minutes of notification. The General Trauma Center will have personnel available who can initiate surgery, and have appropriate equipment and diagnostic capabilities.

Advanced Trauma Center

In addition to the capabilities of the levels above, the role of an Advanced Trauma Center is to provide definitive care for complex and severe trauma. Emergency physicians and nurses are in-house, 24 hours a day, with personnel who can initiate surgery available. Neurological assessment and stabilization will be started immediately and a Neurosurgeon is available. There is a broad range of specialists available for consultation or care, (generally, within 30 minutes), and comprehensive diagnostic capabilities and support equipment are available.

Comprehensive Trauma Center

The role of a Comprehensive Trauma Center is to provide the highest level of definitive, comprehensive care for patients with complex traumatic injury. Personnel who can initiate surgery are in-house and immediately available. In addition to direct patient care, Comprehensive trauma services are also responsible for research, education and outreach programs for trauma. Appropriate equipment for pediatrics should be maintained in Emergency Departments, ICUs, and Operating Rooms for facilities at the general, Advanced and Comprehensive levels of Trauma Centers.

> *All facilities receiving trauma patients shall have a rehabilitation facility or shall have continuous, interactive consultation with a specific designated rehabilitation facility.*

Rehabilitation Center

The Rehabilitation component of the State Emergency Medical Services and Trauma Care System will be integrated with the total system in such a way that ensures rehabilitation management in both acute and post acute phases.

The standards for Trauma Rehabilitation Facilities are adapted from those of the Commission on Accreditation of Rehabilitation Facilities (CARF)--See Rehabilitative Care Section of this Plan.

The Rehabilitation Centers will develop and lead regional quality improvement programs, in which designated Trauma Centers at all levels will participate. All levels will also have internal quality improvement programs and provide appropriate data to the trauma registry.

Specialty Centers (Pediatrics and Burns)

For involvement in the trauma plan as a Specialty Center a demonstration of expertise, financial manpower, physical resources, and a commitment to the service provided will be shown. A Specialty Center will also demonstrate continual accessibility irrespective of day, season, or patient's ability to pay. These two speciality services have entry access from each of the four designation levels as their on-line Medical Controller deems appropriate. These speciality services are designated as such by their professional association governing body, i.e., American Academy of Pediatrics and National Burn Association.

"The designation process consists of two major phases: assessment of need and determination of capability."

XXV. Designation Process

Problem Statement:

There are no designation standards or any processes of designating hospitals and clinics in Nebraska.

Recommendation:

Create a uniform designation process for hospitals and clinics in Nebraska.

The designation process consists of two major phases: assessment of need and determination of capability. The assessment of need begins with each EMS/Trauma Region identifying the number and level of trauma care services needed in their area.

This process follows general guidelines provided by the State but allows for broad variations and differing methodologies among the regions. It is important to note that while existing and forecasted volumes are important considerations in determining the need for a trauma center, they are not the overriding deciding factor.

There are four primary objectives underlining the designation process: access, quality, viability and cost.

Access

While patient volume plays a role in each of these objectives, the American College of Surgeons has not established a minimum

volume standard for any level of trauma care service. This allows a region flexibility in assessing the need for trauma care services within their area, and would not preclude institutions which could demonstrate a commitment and ability to provide high quality trauma care services simply because of a minimum volume standard.

It is the States desire to ensure an inclusive system and as such, allow each institution the responsibility of determining what level of care they will seek. Such institutions will be designated only after submission of a Request for Designation (RFD) and meeting the requirements of that level.

Quality

The second phase of the designation process is the determination of actual capability. This process begins with notification to all potential participants of the need for trauma care services in their area. Interested institutions should complete an RFD.

Viability

The State will provide information to assist applicants in determining their ability to meet their level of participation in the trauma system. This information will include descriptions of requirements for designation at each level, average length of stay and other pertinent variables. Each proposal will be reviewed by the State and State Trauma Board to assure compliance with all requirements. Those applicants who pass the "Paper Review" will receive a thorough on-site review by a team of experts in trauma care.

Cost

Trauma Center Review Teams at the Comprehensive and Advanced level will consist of out-of-state experts (American College of Surgeons). The General and Basic Trauma Centers review

team will be from out-of-region. All costs incurred will be the responsibility of the applicant. Fees will be waived for General and Basic Trauma Centers.

Comprehensive and Advanced Trauma Centers will be subject to an annual inspection by the State. After designation, facilities will be subject to random, unannounced audits and inspections by the State to ensure their continued commitment to quality standards.

Outreach

For those larger institutions applying for designation at the Comprehensive or Advanced Level, technical expertise on the designation process likely exist in-house or can be contracted without undue duress. However, for smaller institutions, and in particular those hospitals and clinics serving rural and Native-American communities, in-house expertise or contracting capabilities are nonexistent. The State encourages the larger institutions to assist the smaller, lower level institutions with technical assistance and likewise the State will assist and consult with all facilities to assure a common understanding, appropriately developed applications, and timely reviews. It would be appropriate during this time for higher level facilities to craft Interfacility transfer agreements.

The following are examples of appropriate outreach that the Comprehensive or Advanced Level Trauma Centers could utilize to assist the lower level facilities in their region to avoid clinical instability:

- Designated workshops-- a series of focused workshops to identify perceived barriers of clinical instability to Designation/participation as well as to generate options and strategies for overcoming those barriers

- Individual consultations-- on-site consultations with facilities preparing an application for designation

- Designation process manual-- the development of a "how too" manual for hospitals and clinics preparing to apply for designation. Comprehensive and Advanced Trauma Centers will also encourage buy-in, implementation, and provide continued availability after designation.

- Public meetings to explain how process will work.

Rehabilitation...

XXVI. Medical Rehabilitation

Problem Statement:

There are no Rehabilitation standards or designations for Rehabilitation Centers.

Recommendation:

Create designation guidelines and standards for Rehabilitation Centers.

Rehabilitative Centers shall be designated as providing *basic, general or advanced* rehabilitative care, as determined by the extent of services available and the depth of programing provided on site. While accreditation is not essential to facility designation, rehabilitation standards of care shall be adapted from those developed by the Commission on Accreditation of Rehabilitation Facilities (CARF).

Basic Rehabilitative Care

Basic Rehabilitative Care shall include provision for physical therapy, occupational therapy and speech-language pathology services.

General Rehabilitative Care

General Rehabilitative care shall include a 24-hour program of coordinated, integrated medical and rehabilitative services. This program will be provided by an interdisciplinary team comprising of rehabilitation medicine, psychology, rehabilitation nursing, social work and therapeutic recreation practitioners, as well as the therapy services described under Basic Rehabilitative Care.

Advanced Rehabilitative Care

In addition to the services provided by organizations which provide Basic and General Rehabilitative Care, Advanced Rehabilitative Care shall include specific, comprehensive programs and services for brain and spinal cord injured patients.

Discussion:

The State shall require each designated Trauma Care facility (adult and pediatric) to have a case manager or equivalent who has experience in trauma rehabilitation and who is responsible for the process of post acute services. This designated person shall be involved in the care of the patient from entry into the Trauma System through discharge, whether to a rehabilitation facility or elsewhere.

This case manager or equivalent shall provide early rehabilitation intervention; promote awareness by other care givers of the impact on rehabilitation outcomes of medical and/or surgical treatments and facilitate transfer to rehabilitation centers or provide other discharge planning as appropriate. The case manager or equivalent responsible for the process of post acute services will be a member of the continuous quality improvement committee in each designated trauma care facility, insuring that rehabilitation is treated as part of, not supplementary to, emergency trauma care.

A centralized, statewide trauma registry base shall be developed, maintained, and adequately funded. All trauma-systems data shall be linked by a common patient identifier.

* *See Evaluation Section of this Plan.*

Mandatory uniform data reporting on each trauma patient from both pre/out-of-hospital and in-hospital care providers shall include a minimum data set to include E-Codes. Designated trauma Centers shall provide more extensive data to the trauma registry.

Eventual disposition shall include: acute rehabilitation, subacute care/SNF, long term care facility/ICF or home, as well as vocational status at the time of departure from the trauma system. In addition, cost, length of stay and functional outcome data shall be collected during the post acute care stay.

EVALUATION

"Trauma system evaluation is achieved through the collection and review of data which reflects the services provided."

XXVII. Data Collection and Evaluation

Problem Statement:

There is no uniform data collection to track trauma statistics in the State of Nebraska.

Recommendation:

Create an organized data collection plan that can be utilized by the State, Trauma Regions, Hospitals, Prehospital Providers and Rehabilitation Centers to determine the trouble areas and successes of the Trauma Plan.

Trauma system evaluation is achieved through the collection and review of data which reflects the services provided. It involves the participation from all those in the delivery of trauma care throughout the State of Nebraska.

System requirements: One major data base will form the primary core of the trauma information system:

The State Trauma Registry

EMS Programs shall maintain a statewide registry of major trauma including linked hospital and prehospital information. Such State Registry shall be adopted after a competitive bidding process. Other data sets which will augment this core include the data base comprising death certificates, the Comprehensive Hospital Abstract

Reporting System, (CHARS); Fatal Accident Reporting System (FARS), the Hospital Utilization Report, and the Behavior Risk Factor Surveillance System (BRFSS). With the exception of the State Trauma Registry, all of the above identified data bases are operational and generating data which EMS Programs utilize. It is the goal of this process that these data bases be linked to maximize the effectiveness of the system, control costs, and improve delivery of care.

State Trauma Registry - Data elements and inclusion criteria for the state trauma registry shall be adopted. Consideration must be given to the National Trauma Registry criteria currently being developed by the American College of Surgeons. The cases to be included are those which meet any of the following criteria:

- Injuries with an ICD-9-CM diagnosis code between 800 and 959.9, (E-Codes) inclusive. (Excluding poisonings; however, drownings are to be included because of the associated injuries.)
- Disposition from the Emergency Department as admission to the hospital for inpatient care with a length of stay greater than 24 hours.
- Death (including death in the Emergency Department.)
- Dead on arrival
- Transfer out of the hospital
- Direct admissions that bypass the Emergency Department
- Fractured hips of the elderly (>=65 years of age).

Hospitals joining the trauma system shall be required to participate in the State Trauma Registry. A two tiered system is proposed. Hospitals designated by the State Department of Health as Advanced Trauma Center or Comprehensive Trauma Center shall maintain a hospital trauma registry. The Advanced Trauma Center and Comprehensive Trauma Center shall collect an all inclusive data set as based on the American College of Surgeons standards, modified to meet the unique needs and resources of Nebraska. Data will be provided to the Department of Health in an electronic format.

Figure 5

Minimum Data Set (To include but not limited to.)

1. Hospital identification number
2. Unique patient identifier
3. Medical record number
4. Patient name
5. Patient social security number
6. Sex of patient
7. Race of patient
8. Age of patient
9. Patient's normal address
10. Zip code of patient's normal residence
11. Insurance
12. Date of injury
13. Time of injury
14. Zip code where injury occurred
15. External Cause of injury code (E code)
16. Mechanism of injury
17. Location where injury occurred
18. If motor vehicle accident, type of safety devices used
19. EMS run sheet number (unique identifier)
20. Name of receiving hospital
21. Arrival date
22. Arrival time to hospital
23. Discharge date from hospital
24. Discharge time from hospital
25. Attending physician name
26. Receiving physician name
27. Pulse, respirations and blood pressure readings
28. Glasgow score (eye, verbal moor)
29. Results of drug screen
30. Results of alcohol blood level
31. Airway management
32. Disposition from hospital
33. admitted to hospital, identification of unit admitted to
34. Diagnoses
35. Operations
36. Complications
37. Results of callback - outcome, self feeding, locomotion, expression, date and time dismissed, disposition, rehabilitation.
38. One year follow up

Hospitals designated by the State Department of Health as Basic or General shall provide the minimum data set to the Department of Health in either a paper or electronic format. This data will be provided for all trauma patients receiving care in their facility that meet the above criteria for case inclusion. It is proposed that a designated person be responsible for data retrieval to facilitate consistency and quality of data.

The minimum data set to be reported by these facilities shall be determined by a statewide board which includes members of the regional boards. The data shall include but not be limited to:

- unique hospital and patient identification number
- patient name and demographic information
- social security number and pertinent treatment information.

Consideration should be given to the National Trauma Registry data elements currently being developed by the American College of Surgeons.

NARSIS Form - All prehospital transporters shall leave a copy of their completed NARSIS Form at the hospital (whether this is a drop-off from the scene or inter/intra facility transfer). The hospital shall make that NARSIS Form a permanent part of the patient's medical records.

Figure 6

PC# NARSIS PATIENT ENCOUNTER FORM (BLS) FORM # B 120729

ADMINISTRATIVE

Dispatch No. _____ Patient Transport Code _____ Chief Complaint _____

Dispatched As _____

Age DOB Sex: M / F Race: Caucasian Black American Indian Hispanic Asian Other

PATIENT INFORMATION

Name

Address

Pickup Address _____

Receiving Facility _____

Receiving MD/Nurse _____

Insurance _____

REPORTING INFORMATION

Service Name _____

Emergency Vehicle # _____

ID# in Charge of Patient _____

Attendant ID#'s: _____, _____, _____, _____, _____, _____, _____, _____.

Signature of person completing form:

RUN DATE & TIMES

Month _____ Day _____ Year _____

_____:_____ Call Received

_____:_____ Squad Dispatched

_____:_____ Time Unit Enroute

_____:_____ 1st Responder Arrival

_____:_____ Arrive Scene

_____:_____ Depart Scene

_____:_____ Arrive Destination

_____:_____ Return to Service

_____:_____ Arrive Back at Station

RUN TYPE / LOCATION

TRANS MED TRAUMA
MED/CARDIAC CARDIAC
TRAUMA/CARD MED/TRAU
Zip Code _____
Patient Transport Miles _____
Fire Zone _____
Census Tract _____

ASSISTED BY

Fire Dept/Mut. Aid EMT
Law Enforcement Bystander
Air Ambulance Nurse
ORT Other
M.D. License # _____
Comments _____

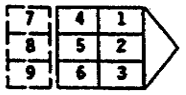
NO TRANSPORT

Standby Pt. Refused Care
Transport Not Required DOA
Unable to Locate
Treated Refused Transport
Cancelled By _____
Comments _____

TRAUMA INFORMATION

TRAUMA - VEHICULAR

Location of person in vehicle prior to accident



Patient was: Safety Device:
In Automobile/Truck Unknown
On a Motorcycle Unrestrained
On a Bicycle Lap Belt
On a Farm Vehicle Air Bag
A Pedestrian Shoulder Harness
Ejected Y N U NA Child Safety Seat
Unknown Helmet
Other _____

TRAUMA - NONVEHICULAR

Fall _____ ft. Blunt
Penetrating Overdose
Farm Equipment Near Drowning
Fire/Burn Gunshot
Animal Bite/Scratch Unknown
Industrial Machinery

PAST MEDICAL HISTORY _____

List Current Medications: None Unknown _____

List Medication Allergies: None Unknown _____

HISTORY AT THE SCENE _____

PUPILS

Equal	Y	N
Reactive	R	L
Nonreactive	R	L
Fixed	R	L
Dilated	R	L
Constricted	R	L
Irregular	R	L

SKIN

Normal Hot
Pale Warm
Dry Cool
Cyanotic Cold
Diaphoretic

CHEST

Clear	R	L
Rales	R	L
Wheezes	R	L
Decreased	R	L
Absent	R	L

Other: _____

ABDOMEN

Normal
Tender
Nontender
Rigid
Distended

PICKUP LOCATION

Home Farm
Public Bldg. Hospital
Residential Institution
Industrial Place
Recreation or Sport
Street or Highway
Other/Unspecified Place

ASSESSMENT

EYE OPENING

Spontaneous	4
To Voice	3
To Pain	2
None	1

VERBAL RESPONSE

Oriented	5
Words or Phrases	4
Incomprehensible	3
Grunts or Moans	2
None	1

MOTOR RESPONSE

Obeys Command	6
Localizes Pain	5
Withdraw (Pain)	4
Flexion (Pain)	3
Extension (Pain)	2
None	1

COMA SCALE SCORE _____

COMA SCALE PTS.

Score	Value
13 - 15	4
9 - 12	3
6 - 8	2
4 - 5	1
3	0

RESP. RATE

10 - 29	4
> 29	3
6 - 9	2
1 - 5	1
None	0

SYSTOLIC B/P

> 89	4
76 - 89	3
50 - 75	2
1 - 49	1
None	0

TRAUMA SCORE _____

PRE-TREATMENT ASSESSMENT _____

IMPRESSION _____

POST-TREATMENT ASSESSMENT _____

COMMENTS _____

TREATMENT

TIME	PULSE	BP	RESP / NSL	EMT ID	TIME	PULSE	BP	RESP / NSL	EMT ID

See Supplemental Form ☐

AIRWAY / VENTILATION

Mouth to Mask
Nasopharyngeal
Oropharyngeal
Oxygen LPM _____
Simple O2 Mask
Non-rebreathing Mask
Cannula
Bag Valve Mask w/ Reservoir
Demand Valve
Other

CPR
Bystander CPR
Clear Airway
Suction
Thumper

Other Procedures

Automatic Defib PASG
Other _____

SPINAL IMMOBILIZATION

Procedure	Equipment
Manual	Collar
Immob. Device	Short Spine Bd.
	Long Spine Bd.

Comment _____

Extrication

Mechanical Y N Rapid Y N
Comment _____

SPLINTS

A - Air T - Traction P - PASG
R - Rigid V - Vacuum O - Other

	Left	Right
Leg	_____	_____
Knee	_____	_____
Ankle	_____	_____
Arm	_____	_____
Elbow	_____	_____
Wrist	_____	_____

HOSPITAL

DIAGNOSIS

1. _____
2. _____
3. _____
4. _____
5. _____

Signature _____

DISPOSITION

DOA
Admitted: Taken to O.R.
Admitted: ICU CCU Acute Care
Discharged - Home
Discharged - Police

Transferred to _____
Discharged: Clinic Follow-Up
Expired in E.R.
Admitted: Held for Observation
Discharged Private M.D. Follow-Up
Other _____

5/91

REPUSAL TO CONSENT TO TREATMENT AND TRANSPORTATION

1. I, _____, of _____ do hereby refuse treatment and transportation by _____.

2. The nature and consequences of refusing treatment and transportation have been explained to me. I understand that it may involve _____
_____

3. The risks, benefits, and options of treatment and transportation have been explained to me.

4. I hereby freely and voluntarily refuse to give my consent to treatment and transportation

____ Offered and refused care

____ Offered and refused transport

Signature _____

Witness _____

Relationship to Patient _____

Date _____ Time _____

5. Mental assessment by ambulance attendant. The patient was found to be:

Alert	Yes / No
Coherent	Yes / No
Articulate	Yes / No

6. Family/Friend Involvement _____

Signature _____ ID# _____
Ambulance Attendant

PC# **NARSIS PATIENT ENCOUNTER FORM** FORM # 288004

Dispatch No. _____ Patient Transport Code _____ Chief Complaint _____

Dispatched As _____ Level of Care Provided ALS BLS

Age DOB Sex: M / F Race: Caucasian Black American Indian Hispanic Asian Other

ADMINISTRATIVE

PATIENT INFORMATION

Name _____
Address _____
_____
Pickup Address _____
Receiving Facility _____
Receiving MD/Nurse _____
Insurance _____

REPORTING INFORMATION

Service Name _____
_____
Emergency Vehicle # _____
ID# in Charge of Patient _____
Attendant ID#'s: _____, _____, _____,
_____, _____, _____, _____, _____.
Signature of person completing form:

RUN DATE & TIMES

Month ____ Day ____ Year ____

____:____ Call Received
____:____ Squad Dispatched
____:____ Time Unit Enroute
____:____ 1st Responder Arrival
____:____ Arrive Scene
____:____ Depart Scene
____:____ Arrive Destination
____:____ Return to Service
____:____ Arrive Back at Station

RUN TYPE / LOCATION

TRANS MED TRAUMA
MED/CARDIAC CARDIAC
TRAUMA/CARD MED/TRAU
Zip Code _____
Patient Transport Miles _____
Fire Zone _____
Census Tract _____

ASSISTED BY

Fire Dept/Mut. Aid EMT
Law Enforcement Bystander
Air Ambulance Nurse
QRT Other
M.D. License # _____
Comments _____

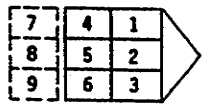
NO TRANSPORT

Standby Pt. Refused Care
Transport Not Required DOA
Unable to Locate
Treated Refused Transport
Cancelled By _____
Comments _____

TRAUMA INFORMATION

TRAUMA - VEHICULAR

Location of person in vehicle prior to accident



Patient was:
In Automobile/Truck
On a Motorcycle
On a Bicycle
On a Farm Vehicle
A Pedestrian
Ejected Y N U NA
Unknown
Other _____

Safety Device:
Unknown
Unrestrained
Lap Belt
Air Bag
Shoulder Harness
Child Safety Seat
Helmet

TRAUMA - NONVEHICULAR

Fall _____ ft.
Penetrating
Farm Equipment
Fire/Burn
Animal Bite/Scratch
Industrial Machinery
Blunt
Overdose
Near Drowning
Gunshot
Unknown

ASSESSMENT

PAST MEDICAL HISTORY _____

List Current Medications: None Unknown _____

List Medication Allergies: None Unknown _____

HISTORY AT THE SCENE _____

PUPILS

Equal	Y	N
Reactive	R	L
Nonreactive	R	L
Fixed	R	L
Dilated	R	L
Constricted	R	L
Irregular	R	L

SKIN

Normal Hot
Pale Warm
Dry Cool
Cyanotic Cold
Diaphoretic

CHEST

Clear	R	L
Rales	R	L
Wheezes	R	L
Decreased	R	L
Absent	R	L

Other: _____

ABDOMEN

Normal
Tender
Nontender
Rigid
Distended

PICKUP LOCATION

Home Farm
Public Bldg. Hospital
Residential Institution
Industrial Place
Recreation or Sport
Street or Highway
Other/Unspecified Place

EYE OPENING

Spontaneous	4
To Voice	3
To Pain	2
None	1

VERBAL RESPONSE

Oriented	5
Words or Phrases	4
Incomprehensible	3
Grunts or Moans	2
None	1

MOTOR RESPONSE

Obeys Command	6
Localizes Pain	5
Withdraw (Pain)	4
Flexion (Pain)	3
Extension (Pain)	2
None	1

COMA SCALE SCORE _____

COMA SCALE PTS.

Score	Value
13 - 15	4
9 - 12	3
6 - 8	2
4 - 5	1
3	0

RESP. RATE

10 - 29	4
> 29	3
6 - 9	2
1 - 5	1
None	0

SYSTOLIC B/P

> 89	4
76 - 89	3
50 - 75	2
1 - 49	1
None	0

TRAUMA SCORE _____

TREATMENT

PRE-TREATMENT ASSESSMENT _____

IMPRESSION _____

POST-TREATMENT ASSESSMENT _____

COMMENTS _____

TIME	PULSE	BP	RESP / NSL	RHYTHM	TREATMENT / IV / MEDICATION	EMT ID
		/	/			
		/	/			
		/	/			
		/	/			

See Supplemental Form ☐

AIRWAY / VENTILATION

Mouth to Mask
Nasopharyngeal
Oropharyngeal
Oxygen LPM _____
Simple O2 Mask
Non-rebreathing Mask
Cannula
Bag Valve Mask w/ Reservoir
Demand Valve
Other

CPR
Bystander CPR
Clear Airway
Suction
Thumper

Other Procedures

Defib Manual Automatic
Other _____

SPINAL IMMOBILIZATION

Procedure: Manual, Immob. Device
Equipment: Collar, Short Spine Bd., Long Spine Bd.
Comment _____

Extrication

Mechanical Y N Rapid Y N
Comment _____

SPLINTS

A - Air T - Traction P - PASG
R - Rigid V - Vacuum O - Other

	Left	Right
Leg		
Knee		
Ankle		
Arm		
Elbow		
Wrist		

HOSPITAL

DIAGNOSIS

1. _____
2. _____
3. _____
4. _____
5. _____

Signature

DISPOSITION

DOA
Admitted: Taken to O.R.
Admitted: ICU CCU Acute Care
Discharged - Home
Discharged - Police

Transferred to _____
Discharged: Clinic Follow-Up
Expired in E.R.
Admitted: Held for Observation
Discharged Private M.D. Follow-Up
Other _____

REFUSAL TO CONSENT TO TREATMENT AND TRANSPORTATION

1. I, _____, of _____ do hereby refuse treatment and transportation by _____.

2. The nature and consequences of refusing treatment and transportation have been explained to me. I understand that it may involve _____

_____

3. The risks, benefits, and options of treatment and transportation have been explained to me.

4. I hereby freely and voluntarily refuse to give my consent to treatment and transportation

___ Offered and refused care

___ Offered and refused transport

Signature _____

Witness _____

Relationship to Patient _____

Date _____ Time _____

5. Mental assessment by ambulance attendant. The patient was found to be:

Alert	Yes/No
Coherent	Yes/No
Articulate	Yes/No

6. Family/Friend Involvement _____

Signature _____ ID# _____
Ambulance Attendant

ASSISTANCE OFFER REPLY

Thank you for your offer of assistance. Be advised that these paramedics/EMTs are operating under authority of Nebraska State Law and protocols adopted by the _____. No physician or other person may intercede in pati care without the base hospital emergency physician on duty relinquishing responsibility for patient care and/or treatmer radio or telephone. If responsibility is given to a physician at the scene, that physician is responsible for any and a given at the scene, and must accompany the patient(s) to the hospital. Furthermore, the physician accepting the above responsibilities must sign the patient's pre-hospital medical record.

Squads shall transport only to the closest receiving hospital. The use of a Trauma Center will be the only time we vary from the closest receiving hospital policy.

_____ _____
Physician's Signature Nebraska License No.

_____ _____
Senior Paramedic at Scene Date

PATIENT'S OR AUTHORIZED PERSON'S RELEASE OF INFORMATION

I authorize the release of any medical information necessary to process this claim. I also request payment of government or insurance benefits to _____ who accepts assignment for the medical services provided.

_____ _____
Patient's Signature Date

First Responder Patient Encounter Form

F 16501

Incident No _____ Age ____ Sex____

Race: ☐C ☐B ☐I ☐H ☐A ☐ _____

CURRENT MEDS: ☐ NONE ☐ UNK _____

_____

_____

MED ALLERGIES: ☐ NONE ☐ UNK _____

DISPATCHED AS: _____ / CHIEF COMPLAINT: _____

PAST MEDICAL HISTORY: _____

_____

ASSESSMENT: _____

_____

_____

_____

_____

_____

IMPRESSION: _____

VEHICULAR TRAUMA

Location of Patient in Vehicle

7	4	1
8	5	2
9	6	3

PATIENT INFO:

- ☐ Automobile/Truck
- ☐ Motorcycle
- ☐ Bicycle
- ☐ Farm Vehicle
- ☐ Pedestrian
- ☐ Ejected Y N U NA
- ☐ Unknown
- ☐ _____

SAFETY DEVICE:

- ☐ Unknown
- ☐ Unrestrained
- ☐ Lap Belt
- ☐ Air Bag
- ☐ Shoulder Harness
- ☐ Child Safety Seat
- ☐ Helmet
- ☐ _____

☐ NON-VEHICULAR TRAUMA

- ☐ Fall _____
- ☐ Penetrating
- ☐ Farm Equipment
- ☐ Fire/Burn
- ☐ Animal Bite/Scratch
- ☐ Industrial Machinery
- ☐ Blunt
- ☐ Overdose
- ☐ Near Drowning
- ☐ Gunshot
- ☐ Unknown
- ☐ _____

TIME	PULSE	BP	RESP
		/	
		/	
		/	
		/	
		/	
		/	

FULL CODE INFO	
Patient Down	
Witnessed	Yes ☐ No ☐
Bystander CPR	Yes ☐ No ☐
Help Called	

PUPILS ☐ Equal

R		L
☐	Reactive	☐
☐	Nonreactive	☐
☐	Fixed	☐
☐	Dilated	☐
☐	Constricted	☐
☐	_____	☐

CHEST ☐ Clear

R		L
☐	Rales	☐
☐	Wheezes	☐
☐	Decreased	☐
☐	Absent	☐
☐	_____	☐
☐	_____	☐

SKIN ☐ Normal

- ☐ Pale
- ☐ Cyanotic
- ☐ Sweaty
- ☐ Dry
- ☐ Hot
- ☐ Cool

ABDOMEN ☐ Normal

- ☐ Tender
  - ☐ RUQ ☐ LUQ
  - ☐ RLQ ☐ LLQ
- ☐ Rigid
- ☐ Distended
- ☐ _____

TREATMENT

AIRWAY/VENTILATION

- ☐ Oropharyngeal
- ☐ Nasopharyngeal
- ☐ Bag Mask
- ☐ Pocket Mask
- ☐ Oxygen _____ LPM
  - ☐ Mask ☐ Cannula
- ☐ Suction
- ☐ Clear Obstructed Airway
- ☐ CPR
- ☐ Defib
- ☐ Cardiac Monitor
- ☐ _____

IMMOBILIZATION

- ☐ Cervical Collar
- ☐ Head Immobilizer
- ☐ KED
- ☐ Long Spine Board
- ☐ _____
- ☐ _____
- ☐ _____

☐ SPLINTS

- ☐ Rigid Splint
- ☐ Air Splint
- ☐ _____
- ☐ _____
- ☐ _____

WOUND CARE

- ☐ Dry Sterile Dressing
- ☐ Wet Dressing
- ☐ Occlusive Dressing
- ☐ Pressure Dressing
- ☐ Direct Pressure
- ☐ Burn Sheet
- ☐ _____

☐ OTHER

- ☐ Extrication
- ☐ Restraints
- ☐ Reassurance
- ☐ Sterile Water
- ☐ PASG

Glasgow Coma Scale

Eye Opening		
Spontaneous	4	4
To Voice	3	3
To Pain	2	2
None	1	1

Verbal Response		
Oriented	5	5
Words or Phrases	4	4
Incomprehensible	3	3
Grunts or Moans	2	2
None	1	1

Motor Response		
Obeys Command	6	6
Localizes Pain	5	5
Withdraws	4	4
Flexion	3	3
Extension	2	2
None	1	1

Coma Scale Score__ __

TRAUMA SCORE

Coma Scale Points		
13-15	4	4
9-12	3	3
6-8	2	2
4-5	1	1
3	0	0

Respiratory Rate		
10-29	4	4
>29	3	3
6-9	2	2
1-5	1	1
None	0	0

Systolic Blood Pressure		
>89	4	4
76-89	3	3
50-75	2	2
1-49	1	1
0	0	0

TOTAL SCORE __ __

Patient's Name _____

Patient's Address _____

Phone _____ Date Of Birth _____

Pickup Location _____

Responding Service _____ NARSIS # _____

Hospital _____

Refusal to Consent to Treatment and Transportation

I, _____ hereby refuse

☐ treatment ☐ transportation.

RESPONDER:

_____

_____

Signature

_____

Responder Service Name

Run Date	/ /
Vehicle #	
Dispatched	
Arrive Scene	
BLS Took Over	
In Service	

Printed with soy ink on recycled paper

"Collecting data by congressional district allows the State to immediately compile statistics to be used by our representatives to access federal medical care funding"

XXVIII. Data Collection and Evaluation by Congressional District

Problem Statement:

There is no systematic reporting based upon congressional districts and therefore, Nebraska's Congressional Delegation have few statistics concerning the impact of trauma in their region and have a difficult time articulating to Congress the need for funding and support for EMS in Nebraska.

Recommendation

Collect data concerning trauma by region and divide the state into three broad EMS regions for reporting purposes. Collecting data by congressional district allows the State to immediately compile statistics to be used by our representatives to access federal medical care funding to address trauma concerns such as prevention, traffic safety, pediatrics, elderly and work related injuries.

The State shall collect and report data by congressional district. The reports shall be made available for all Trauma System participants.

"The Trauma Registry..."

XXIX. Trauma System Evaluation

Problem Statement:

Since there is no uniform data collection plan there is no effective way to evaluate the data that are presently collected.

Recommendation:

Create a standardized evaluation format by forming a statewide and regional quality Management Committee (made up of, but not limited to, members of the Statewide and Regional Trauma Advisory Board).

Statewide and Regional Quality Management

A multidisciplinary committee will be established within the Nebraska Department of Health consisting of a representative group of health professionals caring for trauma patients (i.e., prehospital through rehabilitation). This group would establish the criteria for review of the trauma registry data. They would review the data on a regular basis and make recommendations for system improvements at the state and/or regional level. The NDOH will provide for the analysis and distribution of the information.

There will be statewide filters developed which every region will review; Regions may also develop their own filters. *Filters are meant to change to reflect current needs.* The Regional TraumaBoard and the State Trauma Board will review certain clinical and system issues identified through a series of filters designed into the Trauma

Registry. For effective review and critique of trauma cases, confidentiality of the information discussed in these committees must be assured. The legislation to be developed must include protection from discovery of the quality assurance issues discussed, and provide liability protection for the quality assurance participants. When performing continuous quality improvement review, the actual discussion and records of the committees should be protected from discovery. Specific patient information or medical records will remain discoverable through established channels.

The State and Regional Trauma Boards will be responsible for established the audit criteria for cases to be reviewed. Each case reviewed will have a finding of the appropriateness of care rendered, and when appropriate, make recommendations for change either at the regional level or throughout the State.

Each designated Center must participate in a Continuous Quality Improvement Program (CQI Program). The focus of the regional program will be on the performance of the entire system and will be organized by the designated Levels of Basic, General, Advanced and Comprehensive Trauma Centers in each region. All levels of designated centers, prehospital providers, medical control, and others involved in trauma care will be allowed to participate. The data contained in the State Trauma Registry will be critical to allow for system evaluation to take place.

Trauma Center Evaluation

Each designated trauma center will be required to implement a Continuous Quality Improvement program (CQI). This program develops quality care standards, produces a process for monitoring compliance with trauma system standards, creates a system of peer review to evaluate specific cases or problems identified by the monitoring process. In addition, the CQI program will develop a process for implementing corrective action to address problems or deficiencies, as well as a process for re-evaluating and documenting the effect of the corrective action taken.

The CQI program should meet the minimum standards of the American College of Surgeons, modified to fit the unique needs of Nebraska. The goals of the CQI program are to monitor:

- the process and outcome of patient care,
- the quality and timeliness of such care, and,
- to improve the knowledge and skills of all involved in trauma care, and provide the structure within which quality improvement can be accomplished.

All facilities would minimally include a review of all deaths. Multidisciplinary case review would be required in hospitals designated as General, Advanced and Comprehensive Trauma Centers.

Trauma Care Research

Ongoing research is necessary to promote the most optimal care. The main areas of research would include clinical, epidemiological, prevention and outcomes. Data release, for the purpose of Trauma research, from the State Trauma Registry is classified as Class I, Class II, Class III, and Class IV. (See release of Confidential Information.)

Release of Confidential Information

Release of confidential patient medical record data shall be released pursuant to Sections 81-663 through 81-675. Data may be released as either Class I, Class II, Class III or Class IV data.
Class I - aggregate statistical reports (an annual report of data)
Class II - aggregate statistical reports as requested by individuals
Class III - patient identifiable information
Class IV - case specific, but not patient identifiable.

Source: Laws 1992, LB 308, § 7; Laws 1993, LB 536, § 122.
Termination date June 30, 2001.

81-660. Brain injury registry; liability for providing information; limitation. No physician, psychologist, hospital, or administrator, officer, or employee of a hospital or medical professional who is in compliance with sections 81-657, 81-658, and 81-663 to 81-675 shall be civilly or criminally liable for divulging the information required pursuant to sections 81-657 and 81-658.

Source: Laws 1992, LB 308, § 8; Laws 1993, LB 536, § 123.
Termination date June 30, 2001.

81-661. Brain injury registry; state agencies; duties. The Department of Correctional Services, the Department of Health and its division of developmental disabilities, the Department of Public Institutions, the Department of Social Services, the State Department of Education and its divisions of special education and vocational rehabilitation, and all other state agencies which serve persons with brain or head injury shall recognize brain or head injury as a distinct disability and shall identify those persons with brain or head injury among the persons served by the agency. Such agencies shall utilize the brain injury registry for improvement of state services for persons with brain or head injury.

Source: Laws 1992, LB 308, § 9.
Termination date June 30, 2001.

81-662. Sections, termination. Sections 81-653 to 81-662 shall terminate on June 30, 2001, unless reenacted or reestablished by the Legislature.

Source: Laws 1992, LB 308, § 10.
Termination date June 30, 2001.

(l) MEDICAL RECORDS AND HEALTH INFORMATION

81-663. Release of data; legislative findings. The Legislature finds that there is a need to establish a framework for consistent release of medical record and health information from the many registries and data bases the Department of Health maintains for the State of Nebraska. The purpose of the release of data is to encourage research which will protect the health and safety of the citizens of Nebraska by assisting in the prevention, cure, and control of specific diseases or injuries.

Source: Laws 1993, LB 536, § 1.

81-664. Terms, defined. For purposes of sections 81-663 to 81-675:

(1) Aggregate data shall mean data contained in the medical record and health information registries maintained by the department which is com-

81-663. The Legislature finds that there is a need to establish a framework for consistent release of medical record and health information from the many registries and data bases the ~~Department of Health~~ Department of Health and Human Services Regulation and Licensure maintains for the State of Nebraska. The purpose of the release of data is to encourage research which will protect the health and safety of the citizens of Nebraska by assisting in the prevention, cure, and control of specific diseases or injuries.

Sec. 854. Section 81-664, Reissue Revised Statutes of Nebraska, is amended to read:

81-664. For purposes of sections 81-663 to 81-675:

(1) Aggregate data shall mean data contained in the medical record and health information registries maintained by the department which is compiled in a statistical format and which does not include patient-identifying data;

(2) Approved researcher shall mean an individual or entity which is approved by the department pursuant to section 81-666 to obtain access to data contained in the medical record and health information registries maintained by the department to assist in the scientific or medical research for the prevention, cure, or control of a disease or injury process;

(3) Case-specific data shall mean data contained in the medical record and health information registries concerning a specific individual other than patient-identifying data;

(4) Department shall mean the ~~Department of Health~~ Department of Health and Human Services Regulation and Licensure;

(5) Medical record and health information registry shall mean the system of reporting certain medical conditions occurring in this state, as prescribed by law, which are reported and recorded in order to achieve the goals of prevention, cure, and control through research and education, and shall include the birth defects registry established in section 71-646, the cancer registry established in sections 81-642 to 81-650, and the brain injury registry established in sections 81-653 to 81-661;

(6) Patient-identifying data shall mean the patient's name, address, record number, symbol, or other identifying particular assigned to or related to an individual patient; and

(7) Research shall mean study specific to the diseases or injuries for which access to data is requested and which is dedicated to the prevention, cure, or control of the diseases or injuries.

Sec. 17. Section 81-664, Reissue Revised Statutes of Nebraska, is amended to read:

81-664. For purposes of sections 81-663 to 81-675:

(1) Aggregate data ~~shall mean~~ means data contained in the medical record and health information registries maintained by the department which is compiled in a statistical format and which does not include patient-identifying data;

(2) Approved researcher ~~shall mean~~ means an individual or entity which is approved by the department pursuant to section 81-666 to obtain access to data contained in the medical record and health information registries maintained by the department to assist in the scientific or medical research for the prevention, cure, or control of a disease or injury process;

(3) Case-specific data ~~shall mean~~ means data contained in the medical record and health information registries concerning a specific individual other than patient-identifying data;

(4) Department ~~shall mean~~ means the Department of Health;

(5) Medical record and health information registry ~~shall mean~~ means the system of reporting certain medical conditions occurring in this state, as prescribed by law, which are reported and recorded in order to achieve the goals of prevention, cure, and control through research and education, and ~~shall include~~ includes the birth defects registry established in section

piled in a statistical format and which does not include patient-identifying data;

(2) Approved researcher shall mean an individual or entity which is approved by the department pursuant to section 81-666 to obtain access to data contained in the medical record and health information registries maintained by the department to assist in the scientific or medical research for the prevention, cure, or control of a disease or injury process;

(3) Case-specific data shall mean data contained in the medical record and health information registries concerning a specific individual other than patient-identifying data;

(4) Department shall mean the Department of Health;

(5) Medical record and health information registry shall mean the system of reporting certain medical conditions occurring in this state, as prescribed by law, which are reported and recorded in order to achieve the goals of prevention, cure, and control through research and education, and shall include the birth defects registry established in section 71-646, the cancer registry established in sections 81-642 to 81-650, and the brain injury registry established in sections 81-653 to 81-661;

(6) Patient-identifying data shall mean the patient's name, address, record number, symbol, or other identifying particular assigned to or related to an individual patient; and

(7) Research shall mean study specific to the diseases or injuries for which access to data is requested and which is dedicated to the prevention, cure, or control of the diseases or injuries.

Source: Laws 1993, LB 536, § 2.

81-665. Department; duties. To implement the intent and purposes of sections 81-663 to 81-675, the department shall:

(1) Adopt and promulgate necessary rules and regulations, including rules and regulations for the frequency and form of information submitted and for standards and procedures for approving researchers;

(2) Execute contracts that the department considers necessary; and

(3) Receive and record the data obtained from the medical and health information records of persons with particular diseases or injuries.

Source: Laws 1993, LB 536, § 3.

81-666. Approved researcher; application; contents; department; powers. The department may approve an individual or entity to be an approved researcher upon application and proof satisfactory to the department that the applicant is a qualified researcher, that the data will be used for bona fide scientific or medical research for prevention, cure, or control of certain diseases or injuries, and that the applicant will maintain the confidentiality and security of data obtained. The application shall contain, but not be limited to, the following information:

(1) The qualifications of the applicant and of the principal investigator, if other than the applicant, including education, experience, prior publications, and recommendations of professional colleagues who have knowledge and experience of scientific or medical research;

(2) The purpose of the research project, a summary of the project, and the anticipated time of completion of such project;

(3) The location where the research project will be conducted and the equipment, personnel, and other resources available to the applicant to carry out the project;

(4) The identity of the individual or entity funding the research project, a description of the availability of funds for the research project, and any conditions on the receipt or continuation of such funding;

(5) The specific data requested and a description of the use to be made of such data and, if patient-identifying data is requested, a substantiation of the need for access to such patient-identifying data;

(6) A description of the measures to be taken to secure the data and maintain the confidentiality of such data during the research project, for disposal of the data upon completion of the study, and to assure that the results of the study will not divulge or make public information that will disclose the identity of any individual patient;

(7) If contact with a patient or patient's family is planned or expected, substantiation of the need for such contact and a description of the method to be used to obtain permission from the patient's physician for such contact; and

(8) Such additional information as the department determines to be necessary to assure that release of data to the applicant is appropriate and will further the purpose of sections 81-663 to 81-675 or the laws governing the specific registry.

Source: Laws 1993, LB 536, § 4.

81-667. Medical records; classification. Medical records provided to the department for use in its medical record and health information registries shall be classified for release according to the following categories:

(1) Class I data shall be confidential with release only in aggregate data reports created by the department on a periodic basis, usually specified in the statutes creating the registry. These reports shall be public documents;

(2) Class II data shall be confidential with release only in aggregate data reports created by the department at the request of an individual. These reports shall be public documents;

(3) Class III data shall be confidential with release of patient-identifying data to approved researchers for specific research projects. The approved researcher shall maintain the confidentiality of the information; and

(4) Class IV data shall be confidential with release of case-specific data to approved researchers for specific research projects. The approved researcher shall maintain the confidentiality of the data.

Source: Laws 1993, LB 536, § 5.

81-668. Case-specific and patient-identifying data; confidentiality; aggregate data; cost. All case-specific and patient-identifying data obtained from medical records of individual patients shall be for the confidential use of the department and the public health agencies and approved researchers that the department determines may view such records in order to carry out the intent of sections 81-663 to 81-675. Such information shall be privileged and shall not otherwise be divulged or made public so as to disclose the identity of an individual whose medical records and health information have been used for acquiring such data. Aggregate data collected shall be open and accessible to the public, and such information shall not be considered medical records pursuant to section 84-712.05. The cost of data retrieval and data processing shall be paid by the data requester.

Source: Laws 1993, LB 536, § 6.

81-669. Case-specific and patient-identifying data; use in legal proceeding; prohibited. All case-specific and patient-identifying data furnished and any findings or conclusions resulting from such data shall be privileged communications which may not be used or offered or received in evidence in any legal proceeding of any kind, and any attempt to use or offer any such information, findings, conclusions, or any part thereof, unless waived by the interested parties, shall constitute prejudicial error resulting in a mistrial in any such proceeding.

Source: Laws 1993, LB 536, § 7.

81-670. Research project; department; review. The approved researcher shall submit the reports or results of the research project to the department. The department shall review such reports or results and shall prohibit publication of confidential information. The approved researcher shall acknowledge the department and its medical record and health information registries in any publication in which information obtained from the medical record and health information registries is used.

Source: Laws 1993, LB 536, § 8.

81-671. Release of information to public health departments and agencies; requirements. Except as otherwise provided by the law governing a specific medical record and health information registry, the department may release information contained in a registry to official public health departments and agencies as follows:

(1) Upon request by an official local health department within the State of Nebraska, the department may release such data pertaining to residents within the jurisdiction of the requesting local health department. The official local health department shall not contact patients using data received under sections 81-663 to 81-675 without approval by the department of an application made pursuant to section 81-666; and

(2) Upon approval of an application by federal, state, or local official public health agencies made pursuant to such section, the department may release such data.

The receiving agency shall not further disclose such data to any third party but may publish aggregate statistical reports, except that no patient-identifying data shall be divulged, made public, or released to any public or private person or entity. The receiving agency shall comply with the patient contact provisions of sections 81-663 to 81-675. The receiving agency shall acknowledge the department and its medical record and health information registries in any publication in which information obtained from the medical record and health information registries is used.

Source: Laws 1993, LB 536, § 9.

81-672. Receipt or release of information; immunity. Any person who receives or releases information in the form and manner prescribed by sections 81-663 to 81-675 and the rules and regulations adopted and promulgated pursuant to such sections shall not be civilly or criminally liable for such receipt or release.

Source: Laws 1993, LB 536, § 10.

81-673. Patient and patient's family; privacy rights. Nothing in sections 81-663 to 81-675 shall be deemed to compel any individual to submit to any medical examination or supervision by the department, any of its authorized representatives, or an approved researcher. No person who seeks information or obtains data pursuant to such sections shall contact a patient or such patient's family without first obtaining the permission of a physician actively involved in the care of such patient.

Source: Laws 1993, LB 536, § 11.

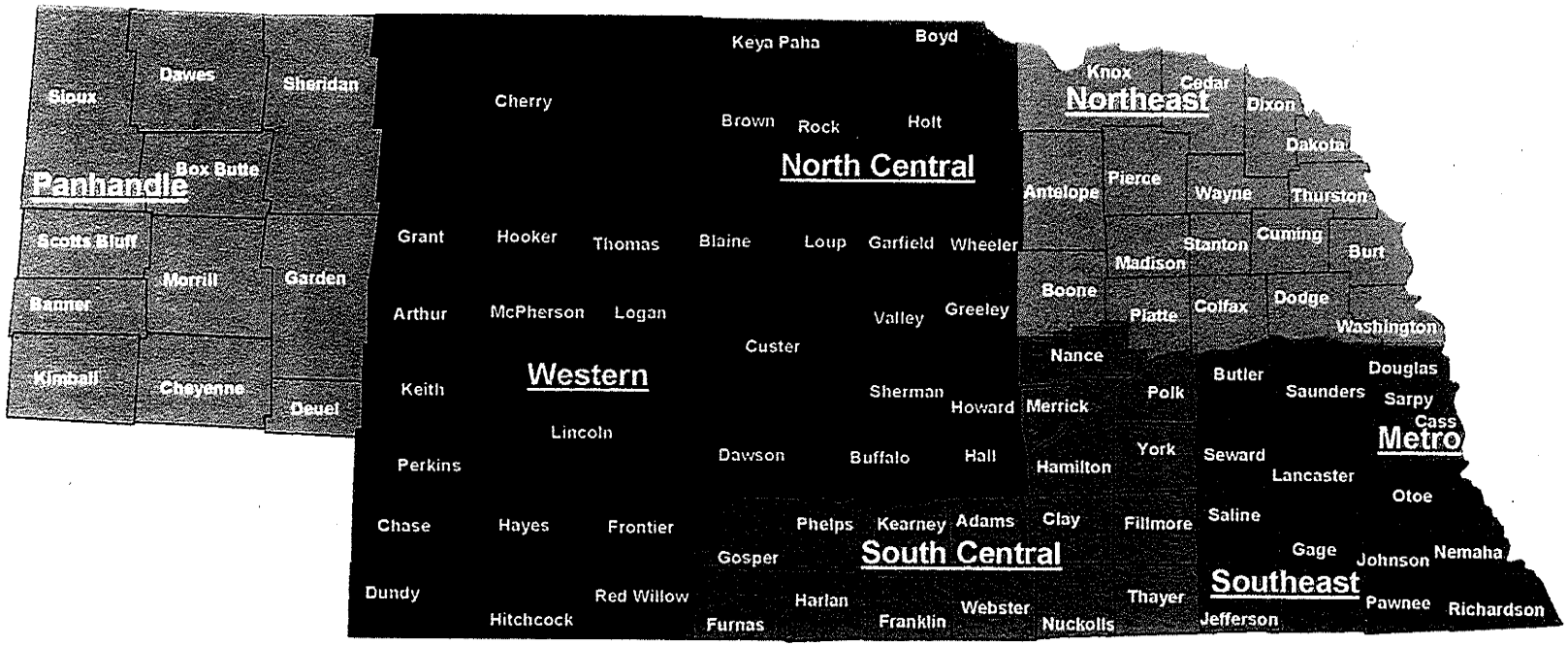
81-674. Violations; penalty. Any private or public entity, individual, or approved researcher who wrongfully discloses confidential data obtained from the medical record and health information registries or uses such information with the intent to deceive shall be guilty of a Class IV misdemeanor for each offense.

Source: Laws 1993, LB 536, § 12.

81-675. Rules and regulations. The department shall adopt and promulgate rules and regulations to implement sections 81-663 to 81-674.

E

TRAUMA REGIONS



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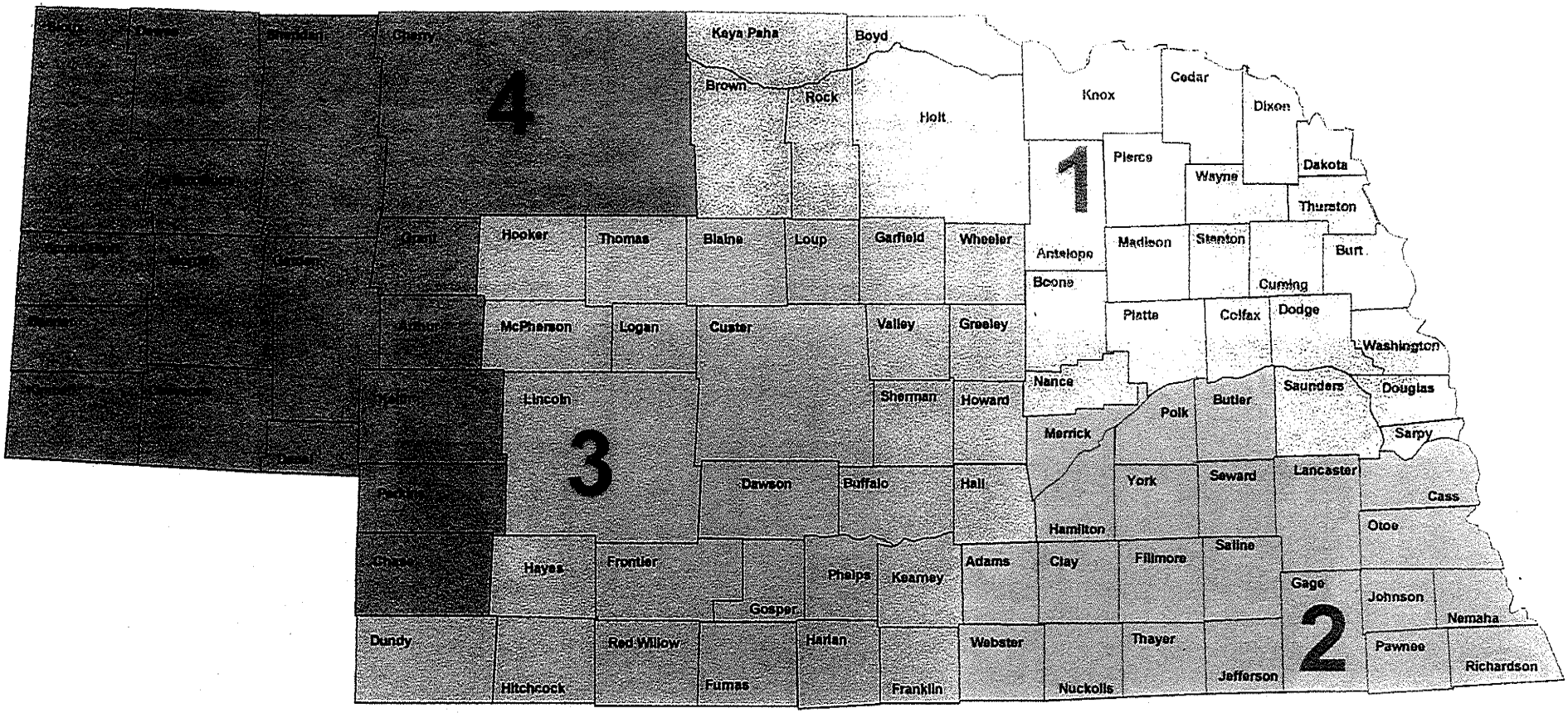
Nebraska
Health and Human Services System
Emergency Medical Services Program

Nebraska Health & Human Services System
EMS Program

Trauma System Regions



"The makeup of a Trauma Region."

XXX. Description of Trauma Regions

Problem Statement:

There are no standards for Trauma Regions.

Recommendation:

Create a description and standards for Trauma Regions.

Trauma Regions will be organized along the established patterns of referral for Trauma incidents.

Each Trauma region will have:

- A *Medical Director* and 24 hours *on-line Medical Controller.*
- Statewide *protocols* for treatment and operations (See Definitive Care Section).
- *Emergency Medical Dispatch* system with ongoing Physician Review and Direction.
- The capability of multiple unit dispatch, cross boundary dispatch, intercept, bypass, and mutual aid services.

- Mandated bypass to most appropriate hospital based on level of injury and care available from the surrounding medical facilities.

- Ongoing *physician review* of all runs activating the system.
- Both contractual and Regional *training, inservices, and review courses.*
- A system of *data collection* that enables effective review of performance and trauma research.

- A recognized *Triage* definition for patient activation of the regional system (Included in this definition would be the Incident Commander's decision to take the patient to a regional trauma care facility.)

- Recognized *definitions for the level of training and certification* of the various EMS Services, hospitals and other individuals and organizations involved in Trauma Care.

- An annual Prevention Plan that is published and disseminated across the region and is incorporated into the overall regional plan.

The Trauma Regions responsibilities shall include coordinated:

- Dispatch
- Training and inservices
- Review, record keeping and research
- Appropriate care for all individuals who fall victim to trauma (from system activation through rehabilitation.)

- Provisions for Continuous Quality Improvement (CQI), and,

- Efforts to upgrade and improve the quality of trauma care on a regional as well as statewide basis.

Legislative must have's.

XXXI. Legislative Issues

This plan is the only systematic approach to dealing with the issue of trauma care and delivery. Currently, Nebraska has been utilizing an inefficient method of creating rules and regulations that are not broad based enough to enforce or address the overall problem.

Further, it has been proven (by the Federal Government) that the most effective and efficient manner to control a complex issue such as trauma is by creating a systematic, inclusive, planned and organized response to trauma, which will enable the State to respond to trauma incidents in the most efficient and cost effective means as possible.

Finally, trauma is preventable. In order to reduce the occurrence of trauma incidents, there must be an organized system to address trauma and there must be funding to accomplish this. In order to compete and receive federal funding an organized, functioning trauma plan must be in place.

These issues must be included in State statute in order to insure the success of the Trauma System.

System Development

- *Authority of Lead Agency* continuing within EMS Programs

- *Fiscal/Resources-* Implementation of this system requires adequate funding. There is no need to enact legislation creating the system if funding is not appropriated.

- *Designation & Authority of Designation-* without the State's right to designate hospitals there will be no way to insure standards and protocols are being adhered to and therefore, no way to conduct quality assurance.

- *Annual Prevention Plan at State and Regional Level*

- *Trauma Registry Reporting & Data Collection-* from all levels of the Trauma system, without which, there cannot be an accurate accounting of system effectiveness.

- *Designation Appeals Process-*Ability of each facility to appeal their designation level.

- *Rules and Regulation Development/Implementation-*authority to develop statutes to comply with the tenants of the plan.

- *Designation Reciprocity-* ability to utilize reciprocity if currently verified under ACS Standards.

- *Lead Agency appoints boardmembers-*on the state and regional boards.

- *Sunset incumbent boardmembers-* but retain them as ex officio members to the new board for continuity in the implementation phase.

Evaluation

- *NARSIS participation mandatory*- assures data collecting capability.

- *Confidentiality of all Data*- following already established statutes

- *Permanent Patient Identifier number*-Have a patient identifier number which stays with the patient throughout the system.

- *Mandatory minimum data set reporting*

Definitive Care

- *Inter/Intra Facility Transfers*-insures protocols are met when transferring a patient to another facility.

- *Bypass authorization*-allows on-line medical director to determine whether bypass to a higher level facility is appropriate.

- *Confidentiality of Survey Team*-insures the hospital against liability if the survey team breeches confidentiality.

- *Confidentiality of Peer Review*-Indemnifies medical professionals when their case is being reviewed.

- *Regionalization based upon patient flow*-allows for the most efficient response from the system and insures that over-designation does not occur.

Prehospital

- *Tiered Response System*-the assignment of emergency medical resources with varying levels of care capability to the scene of an illness or injury based on information received from previously arrived, medically trained, on-scene responders.

- *Triage Protocol*-set criteria to determine level of injury and appropriate facility to transport to.

- *On-line Medical Control*-directs emergency care personnel en route to, at the scene of injury, and en route to medical facility to determine, which hospital to transport to, what on scene and en route procedures should be performed etc.

Supporters of the Plan

Health and Human Services Committee/Legislature: This plan is one of the goals of Healthy 2000 Program. The Committee supported and advanced the enabling legislation.

Senator's Wesely and Wickersham: Senator Wesely has expressed interest in Trauma and will be approached about sponsoring the Bill. Senator Wickersham facilitated and is currently working on EMS Legislation that work hand-in-hand with the proposed Trauma System.

EMS Coalition: Is interested in advancing the System that will enable their members jobs to have more structure, legitimacy and oversight.

Nebraska EMT Association

Nebraska Department of Health: This Plan is a priority for the Department.

Nebraska Department of Highway Safety: This Plan fits into their overall objectives in prevention.

Potential Opposition to the Plan

The associations that represent the industries that have a proposed surcharge added to their fees to fund the Plan i.e., The insurance industry, the Liquor Lobby.

> *It has been proposed that a $250 flat fee be added to each trauma patients bill to fund the Trauma Plan. In most cases this fee will be paid for by the patients insurance company. Additionally it has been proposed that a small surcharge ($.01) be leveled on all alcoholic beverages sold in Nebraska stores.*

Small ambulance services who will need to have a medical director. Those Emergency Services that may oppose adherence to the new rules and regulations.

Some hospitals who may initially be concerned about the cost of the registry.

XXXII. List of Acronyms

EMT	Emergency Medical Technicians
E. R.	Emergency Room
Pre/Out of hospital	Any Ambulance and/or First Responder Service for Initial pick-up, bypass or inter/intra facility Transfer, Rehabilitation Center or other Specialty Center.
BLS	Basic Life Support
ALS	Advanced Life Support
CARF	Commission on Accreditation of Rehabilitation Facilities
ACLS	Advanced Cardiac Life Support
ATLS	Advanced Trauma Life Support
FTE	Full Time Equivalent
TNCC	Trauma Nurse Coordinator Course
MTTU	Mobile Trauma Training Unit
PHTLS	Physician Trauma Life Support
BTLS	Basic Trauma Life Support

APPENDICES

Figure 10

Existing Trauma Centers

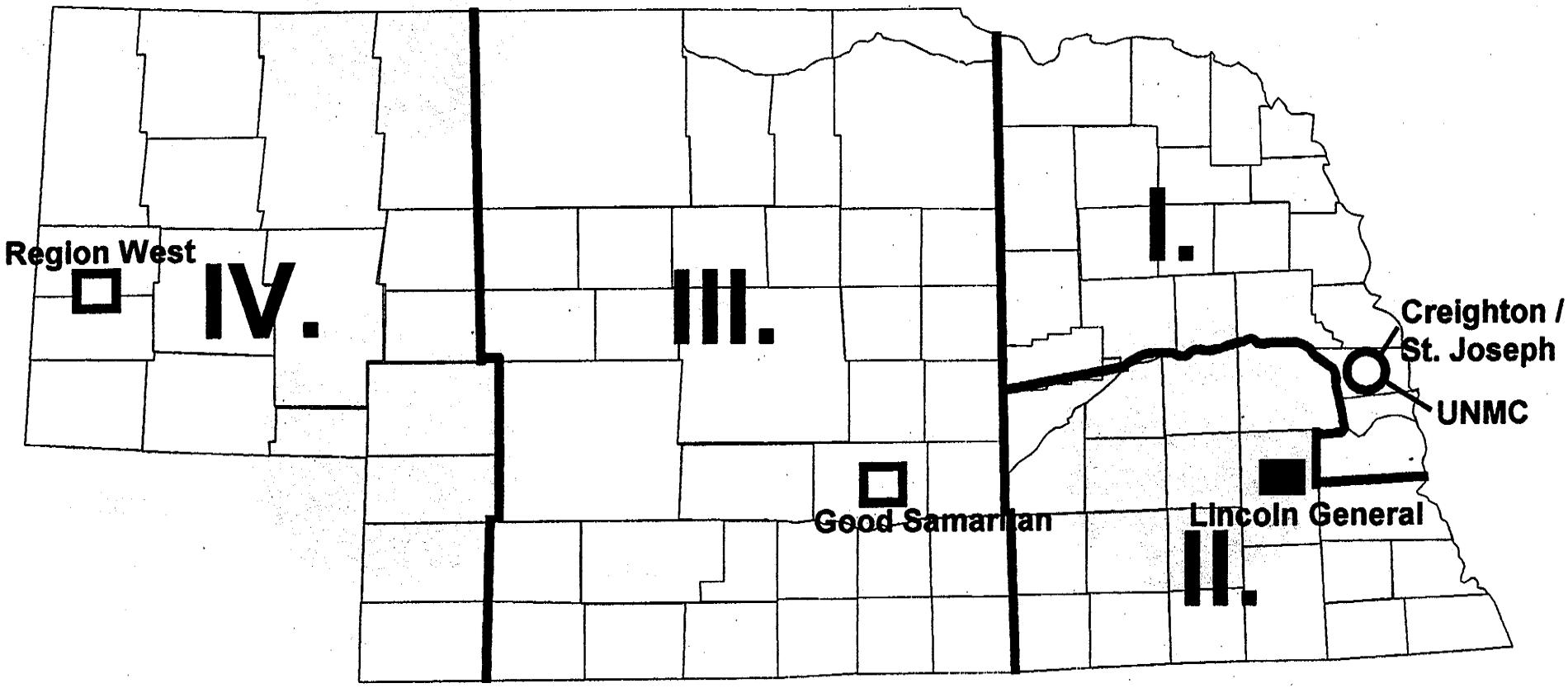


Figure 11

Auto Accidents By Gender & Age

Alcohol Related Deaths

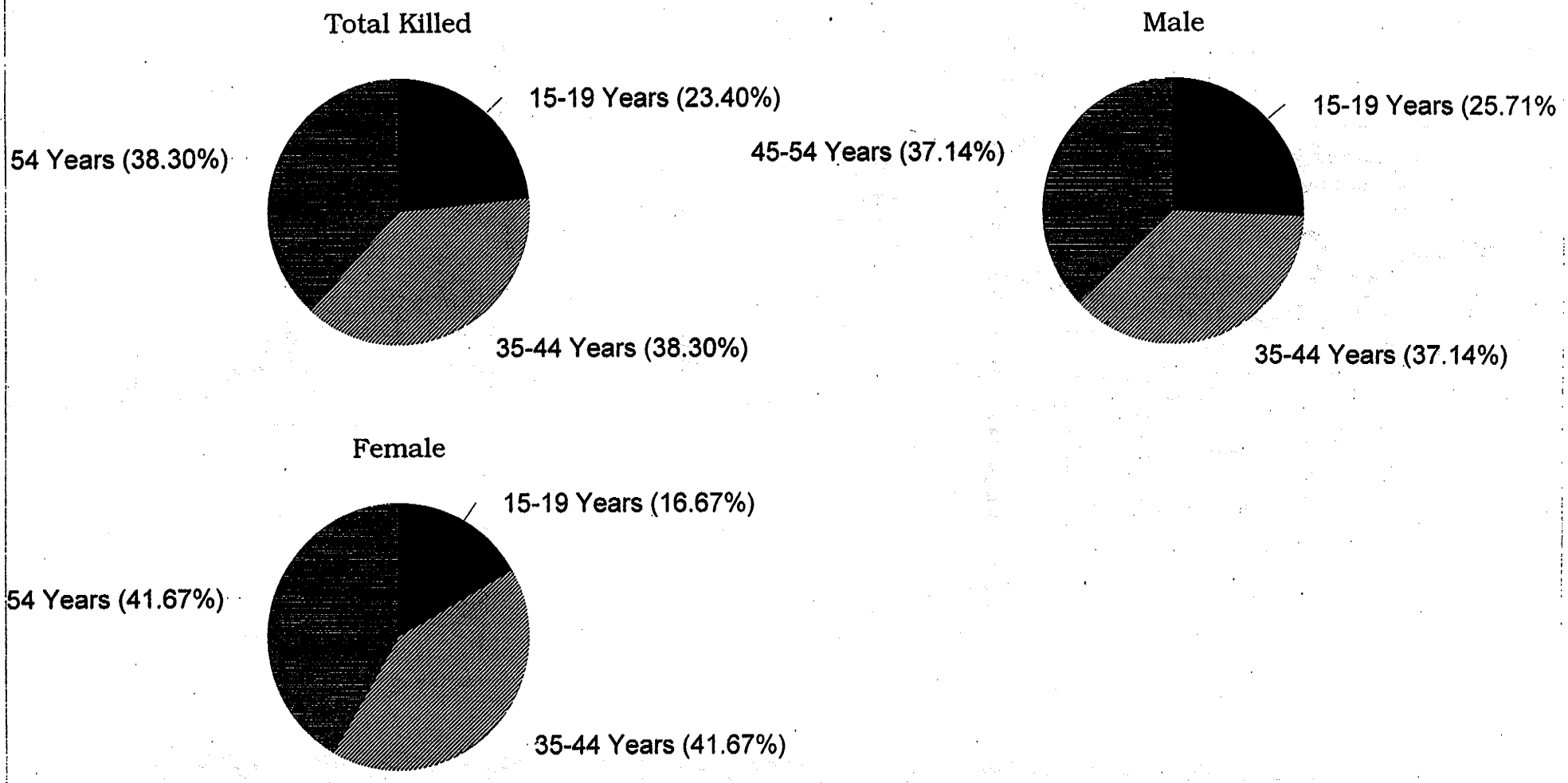


Figure 12

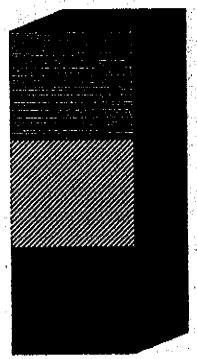
Auto Accidents By Age & Gender Killed

Total Killed

5-44 Years (33.63%)

5-44 Years (32.74%)

5-19 Years (33.63%)

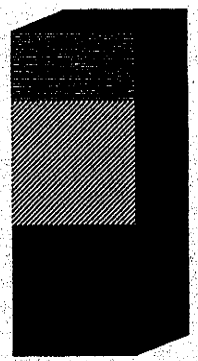


Male

35-44 Years (21.74%)

25-44 Years (37.68%)

15-19 Years (40.58%)



Female

5-44 Years (41.67%)

5-44 Years (30.56%)

5-19 Years (27.78%)

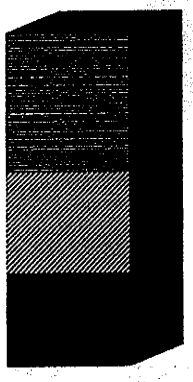


Figure 13

Auto Accidents By Gender & Age

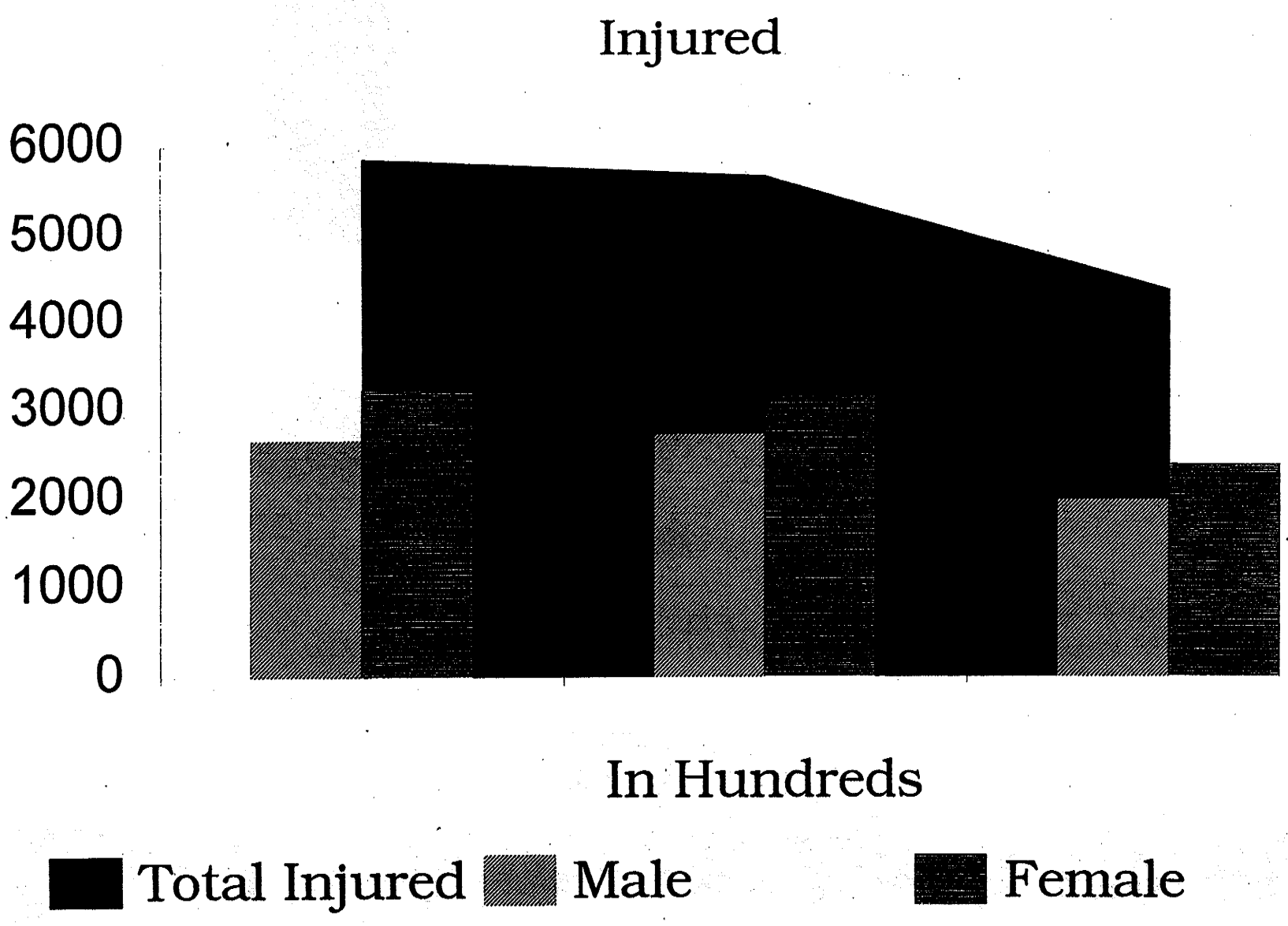


Figure 14

Total Auto Accidents By Gender & Age

Alcohol Related Injuries Only

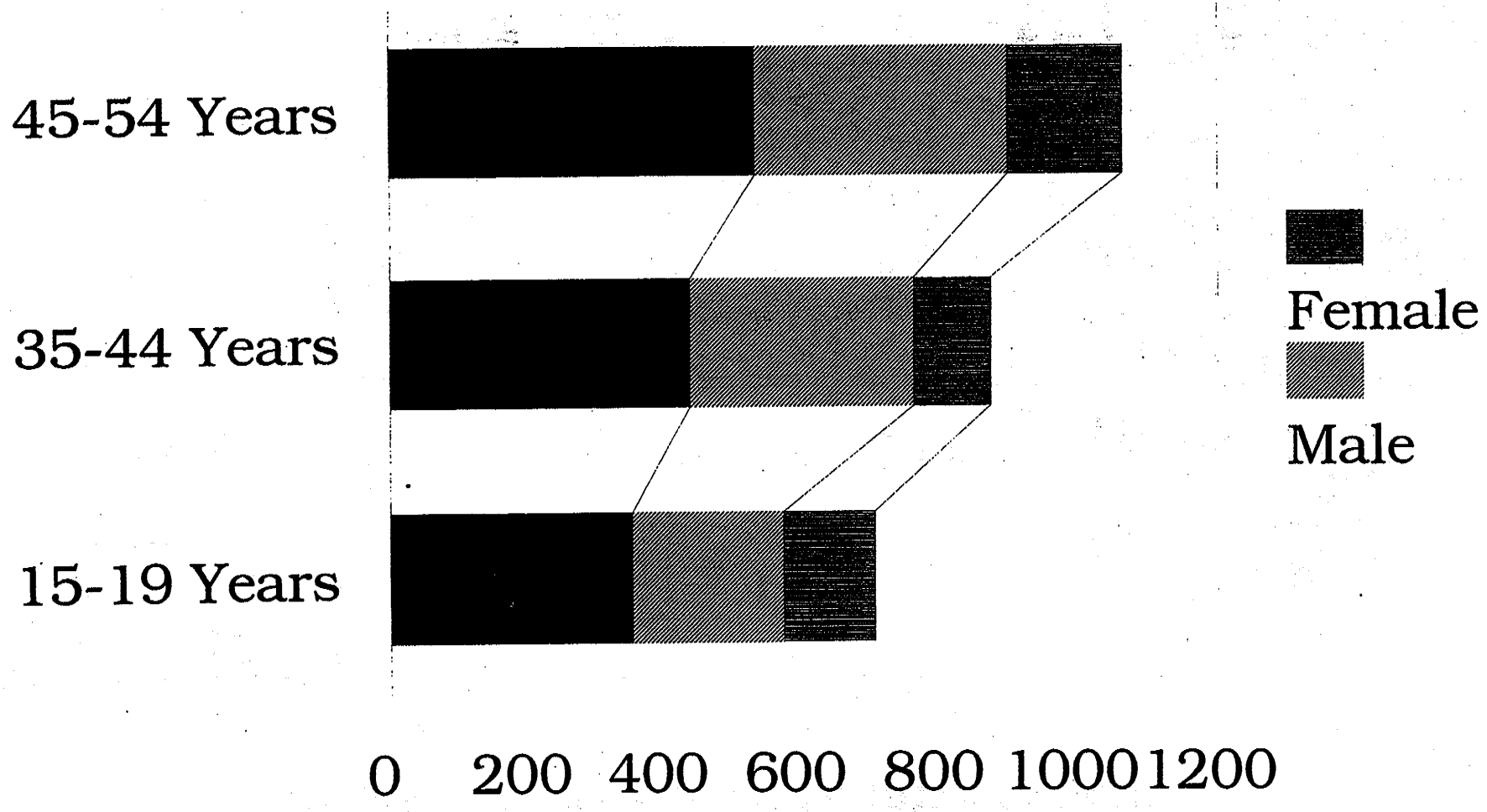
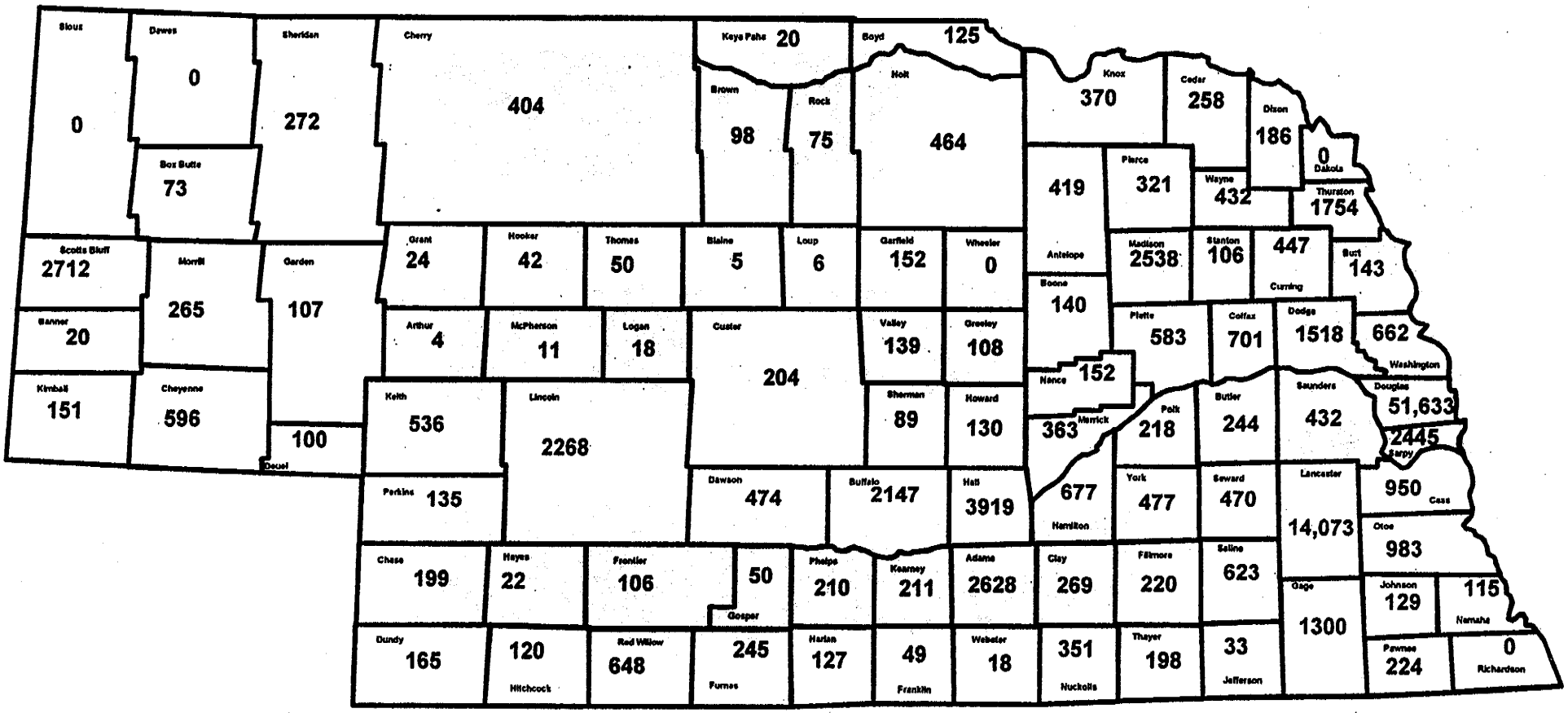


Figure 15

Number of Runs By County During 1995

Total # of Runs Statewide for 1995 = 107,953*



NARSIS
Data Collection Section
Nebraska Department of Health

*Records for 55 runs were missing county data

Figure 16

Ambulance Run Types 1995

From NARSIS Report

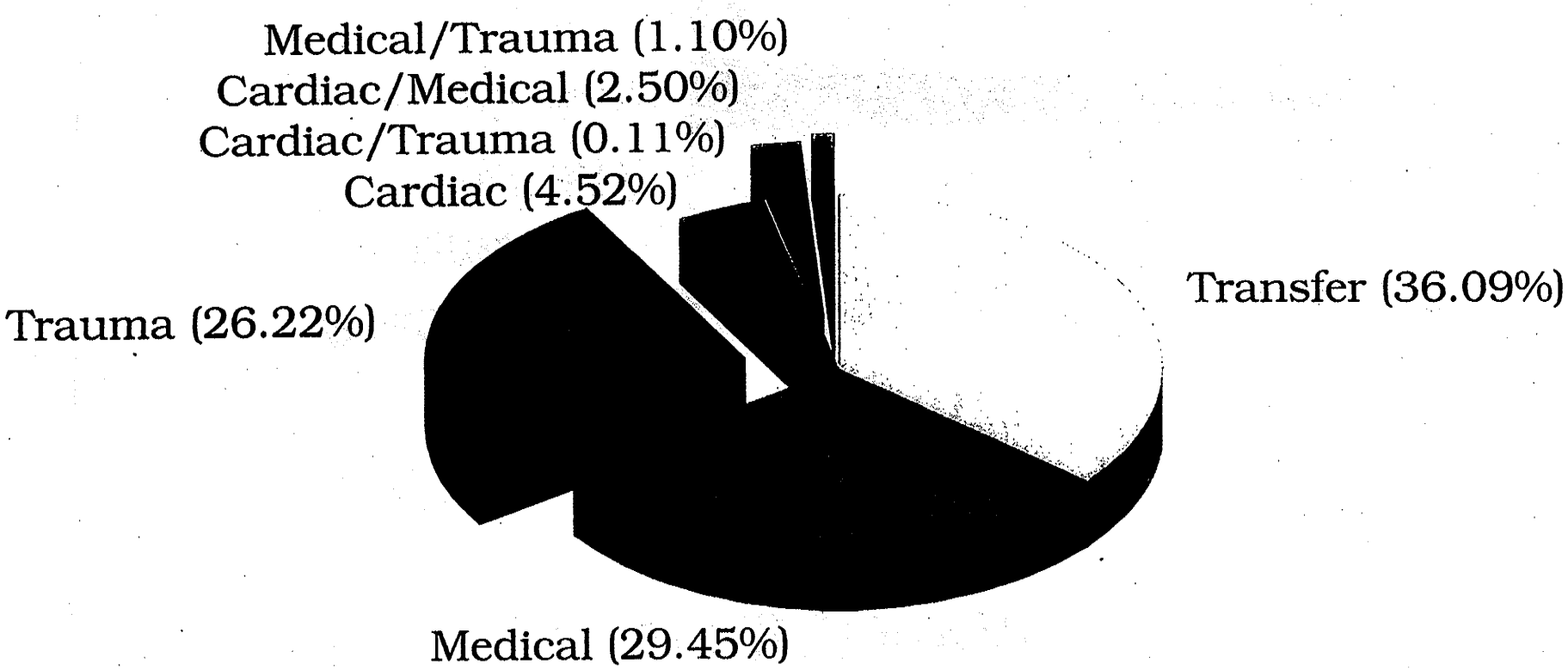


Figure 17

Patient Assistant Breakdown

NARSIS Form

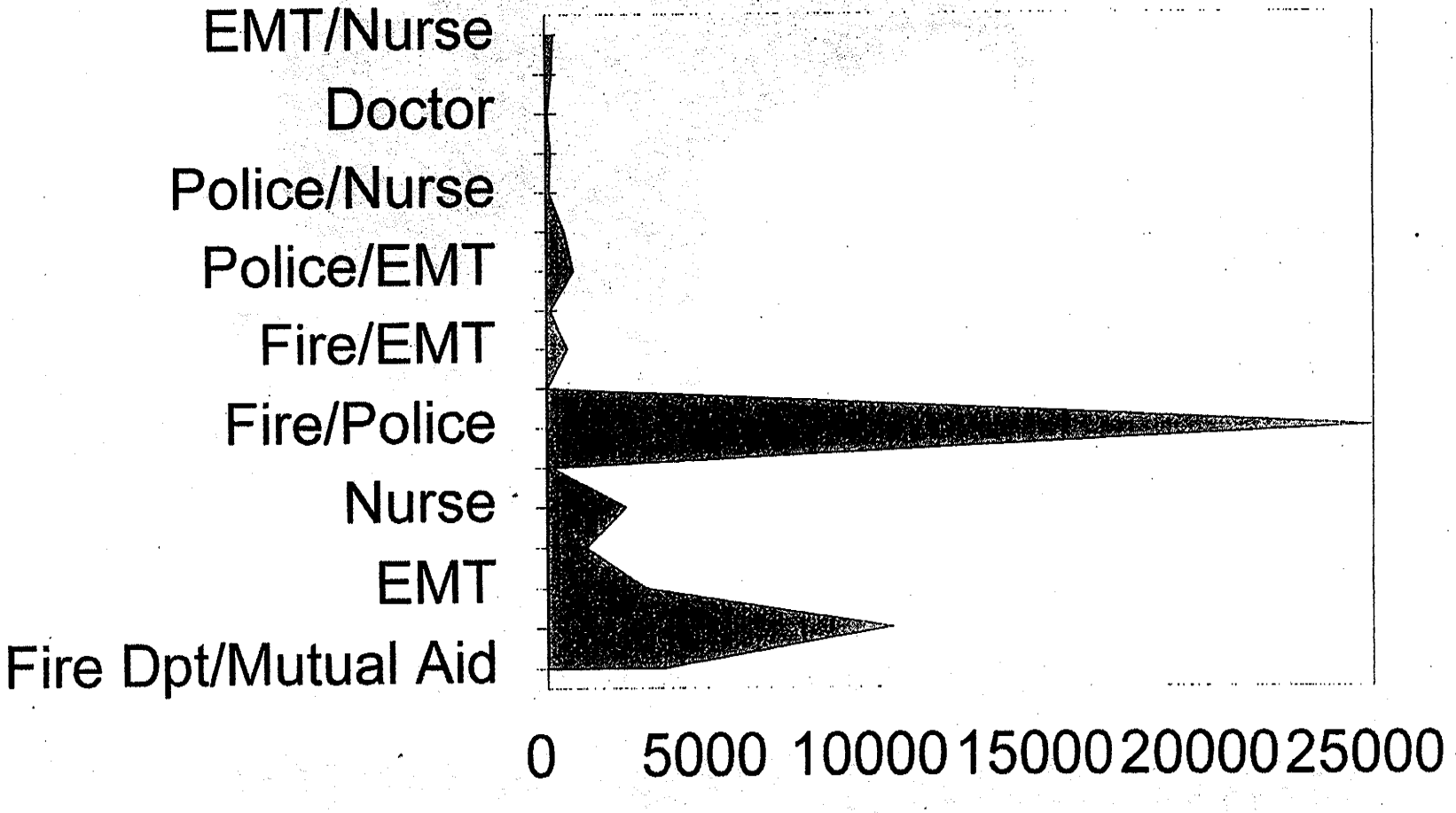


Figure 18

Disposition of Patient

NARSIS Report

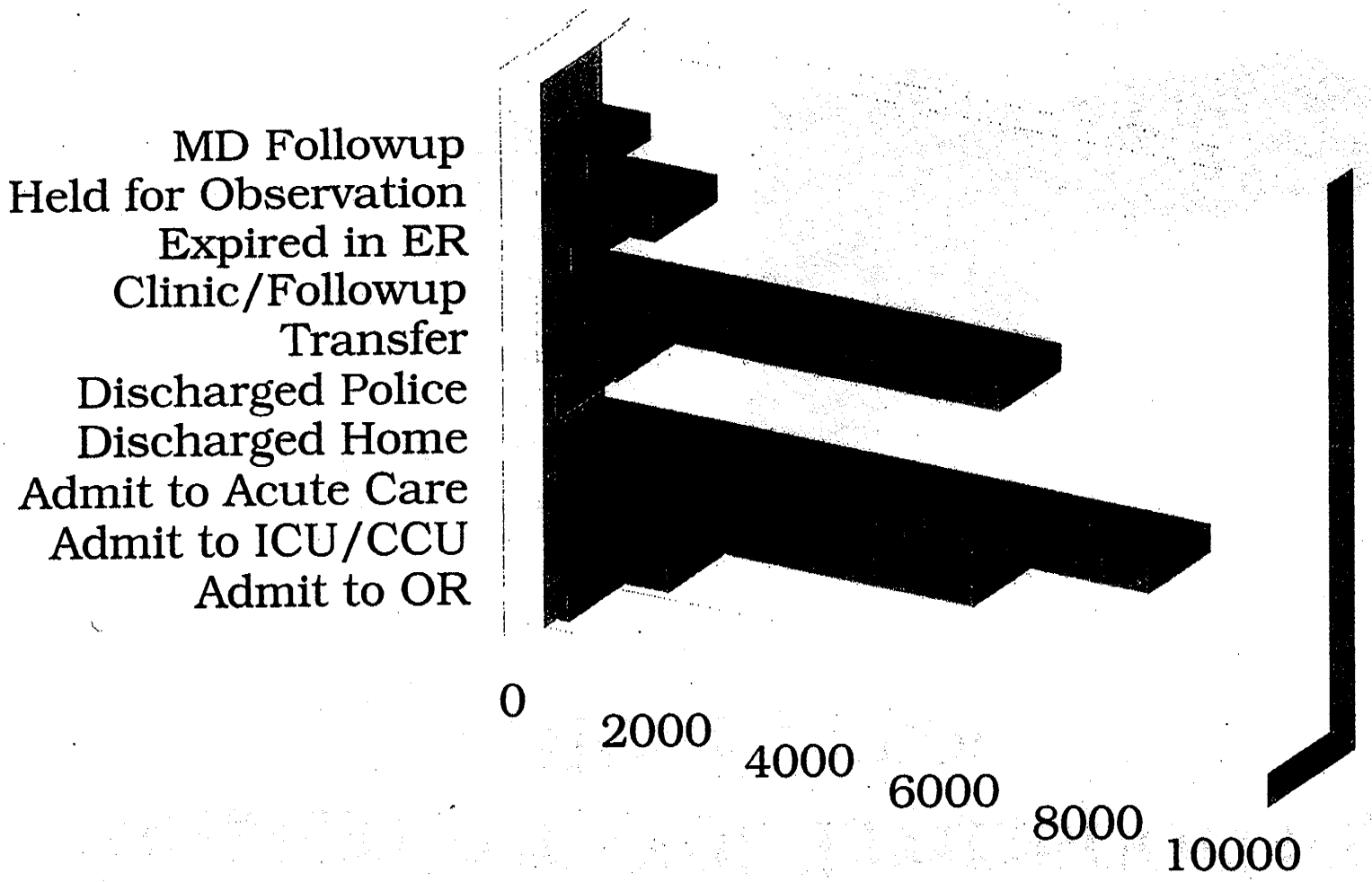


Figure 19

Reason for Not Transporting

NARSIS Report

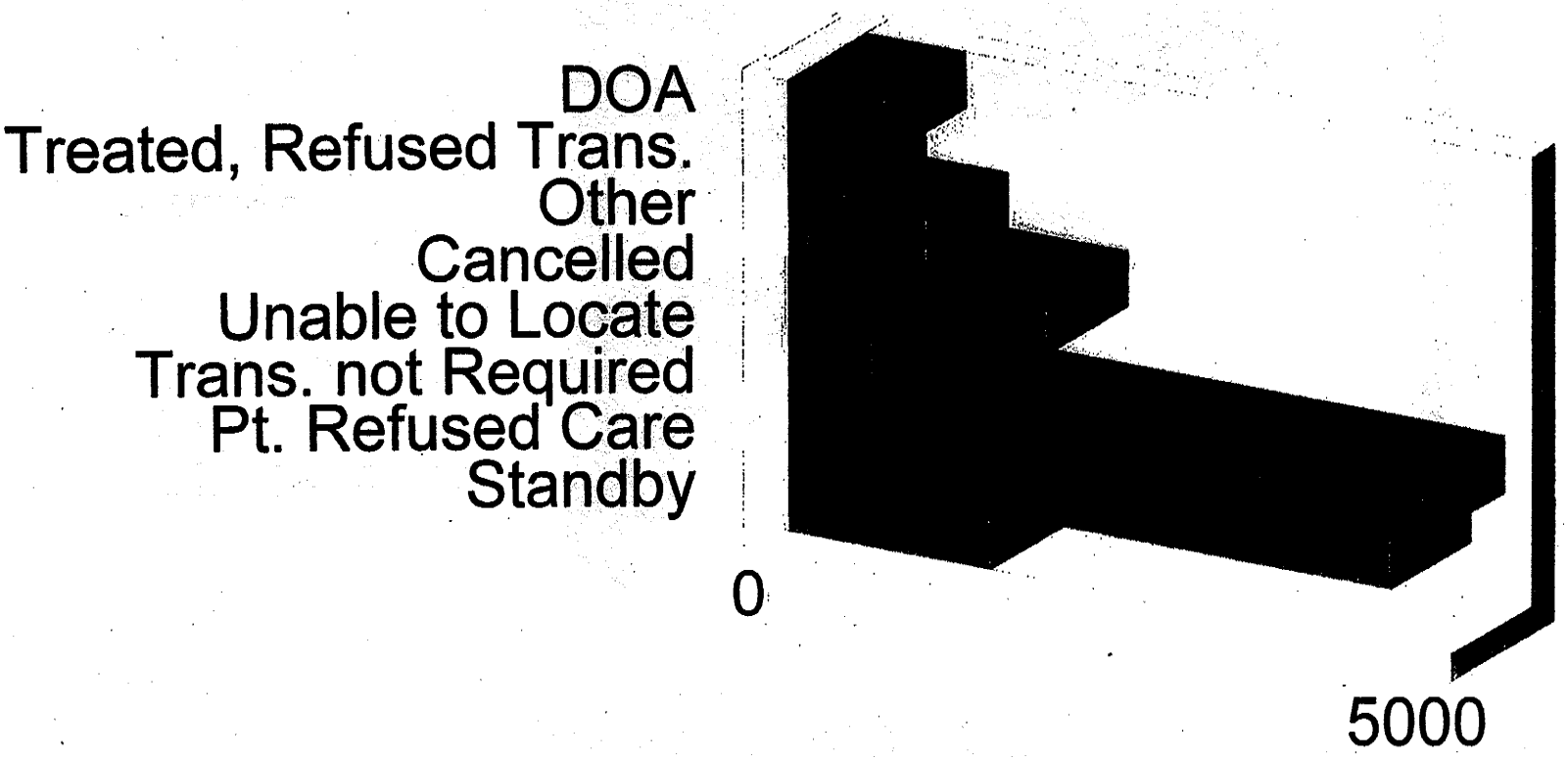
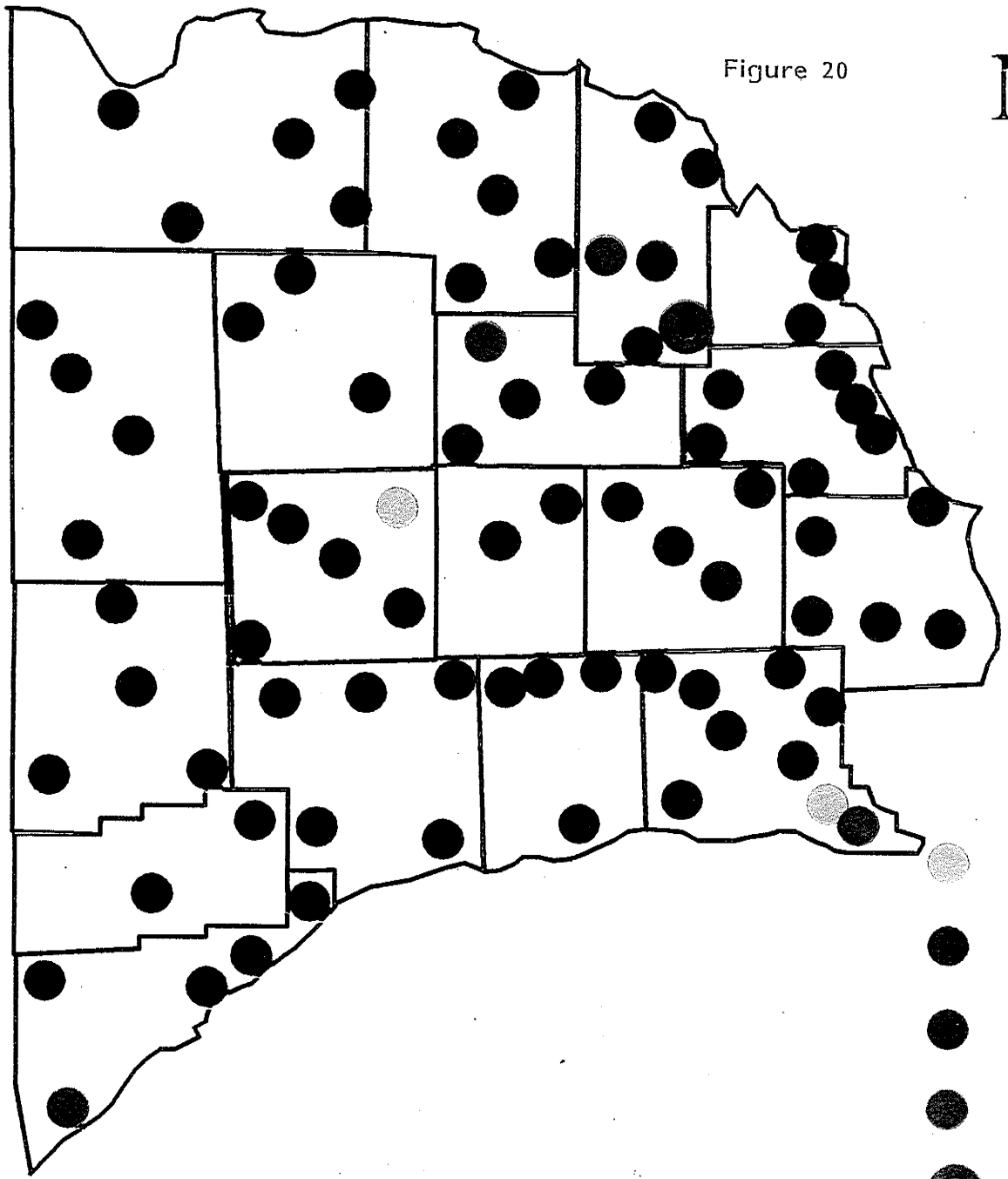


Figure 20

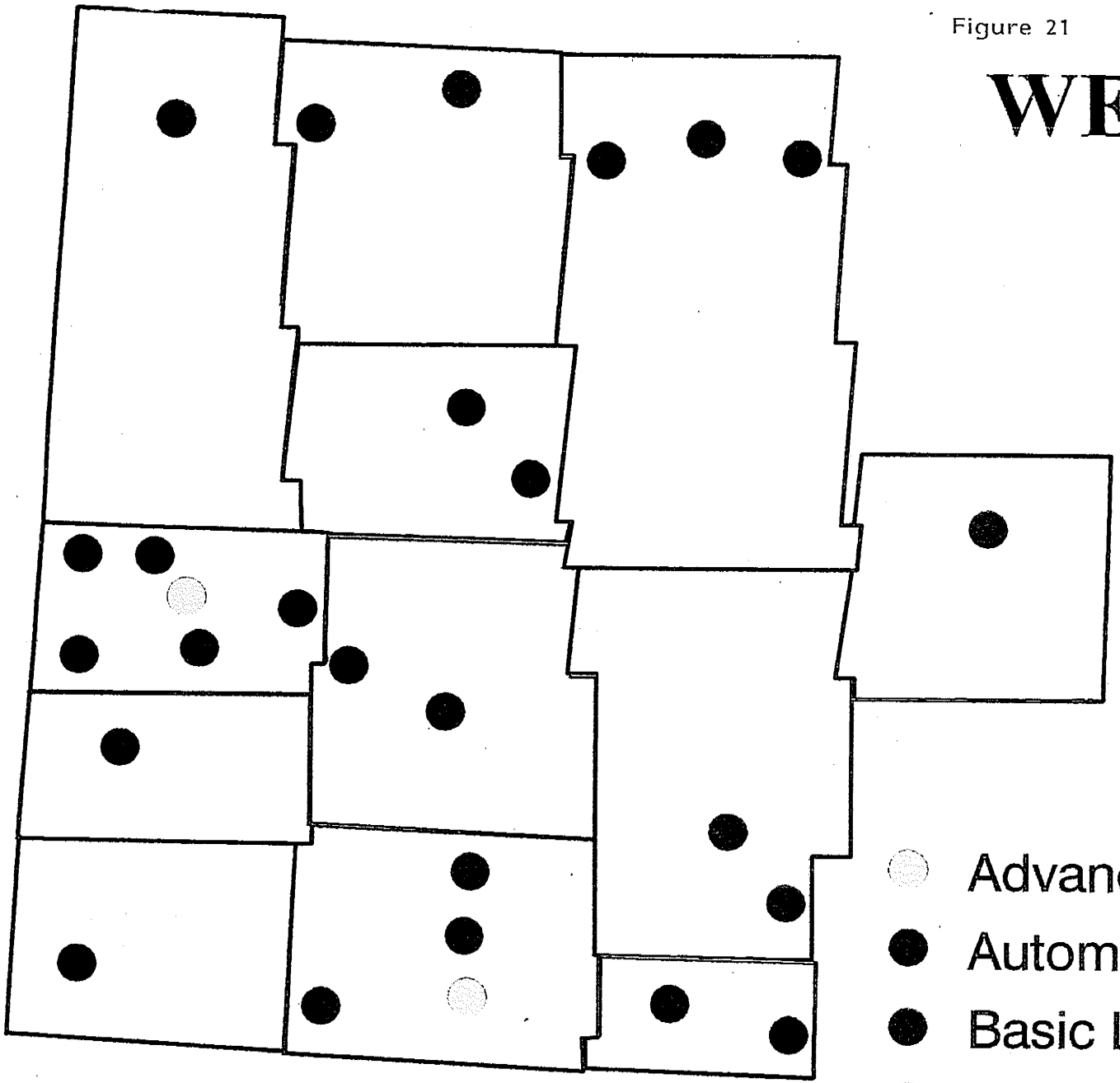
NORTH EAST



- Advanced Life Support
- Automatic Defibrilator
- Basic Life Support
- First Responder
- First Responder/Auto Def

Figure 21

WESTERN



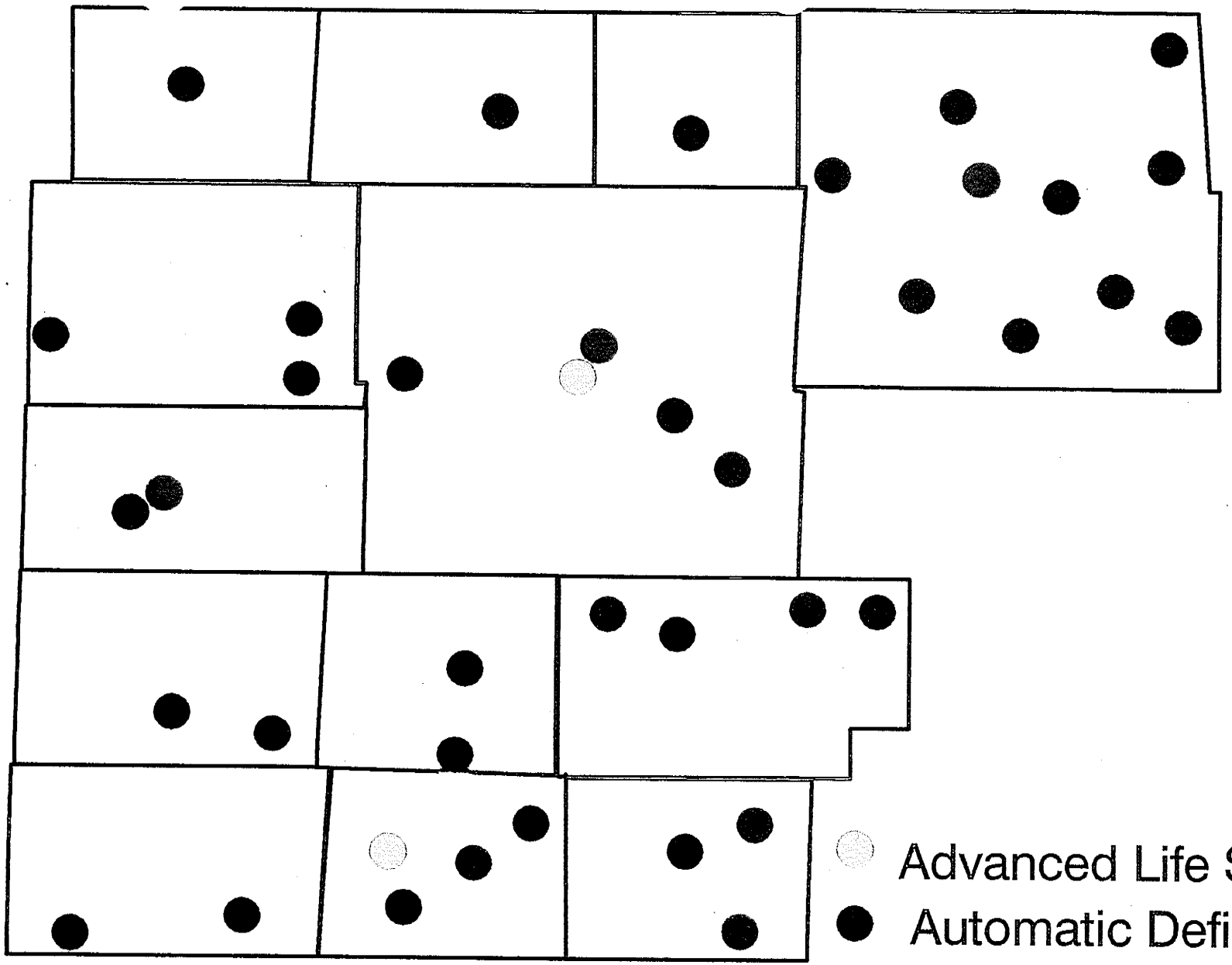
Advanced Life Support

Automatic Defibrilator

Basic Life Support

First Responder

Figure 22



WEST CENTRAL

- Advanced Life Support
- Automatic Defibrilator
- Basic Life Support
- First Responder

Figure 23

SOUTH CENTRAL

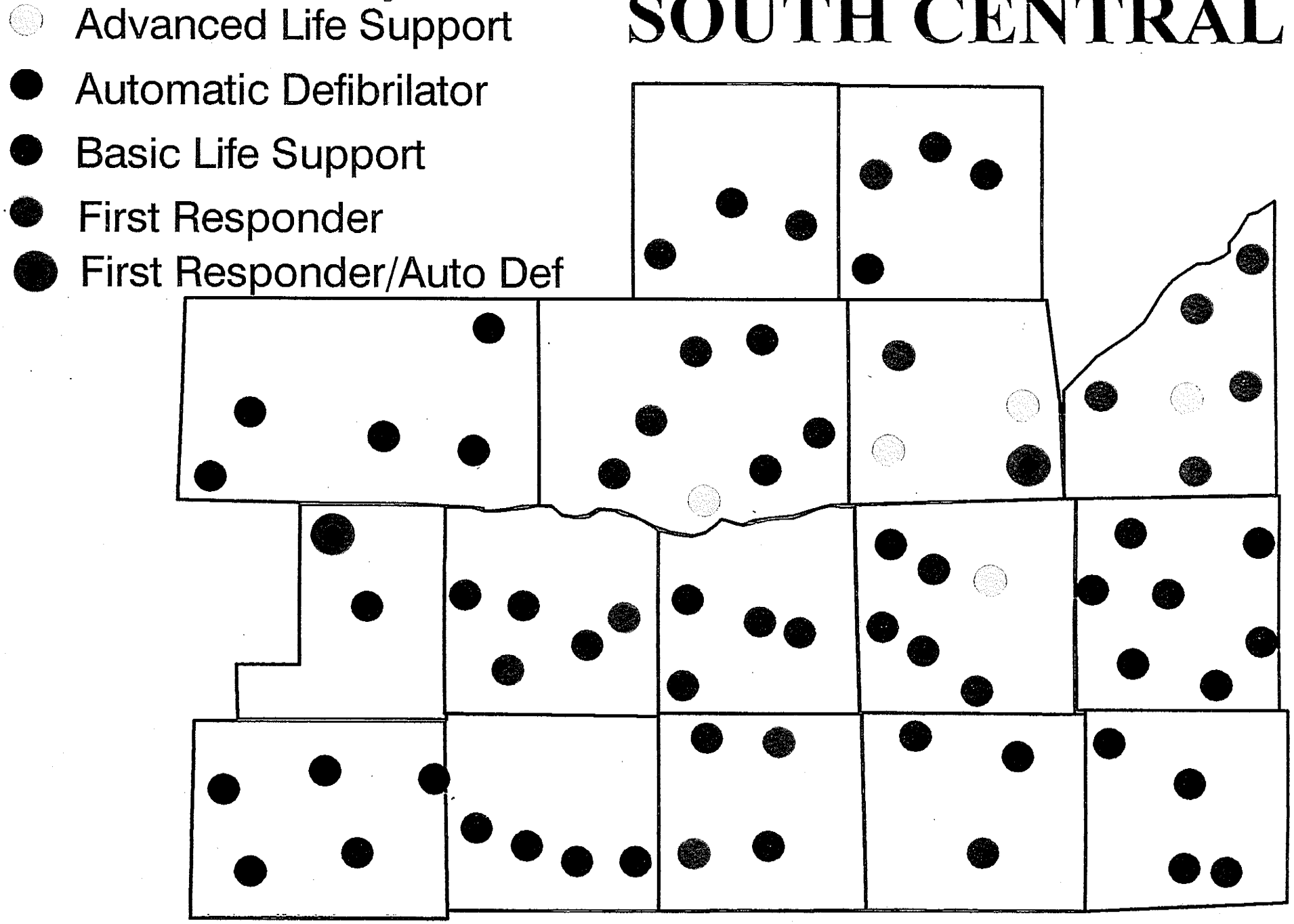
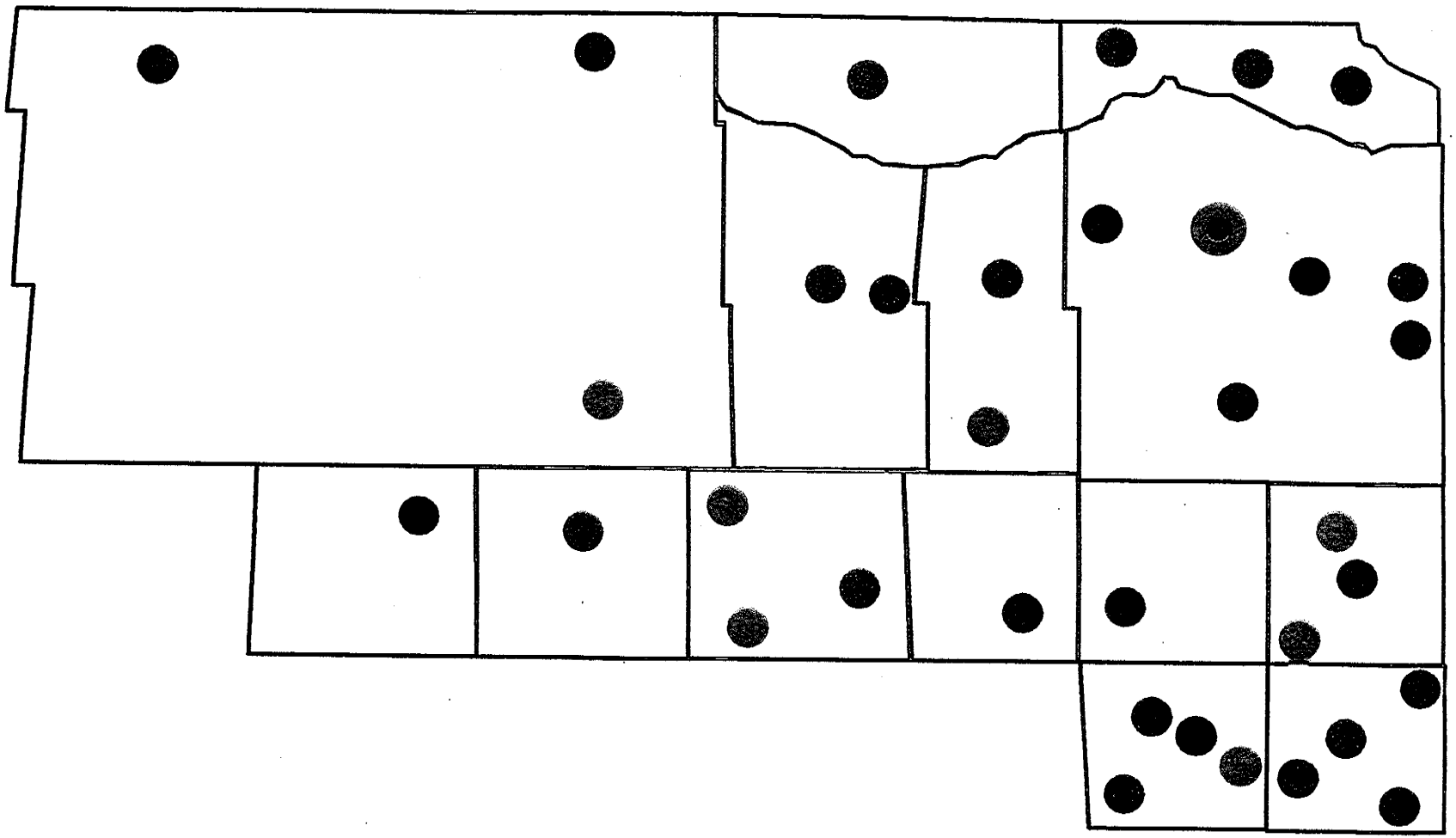


Figure 24



Advanced Life Support

Automatic Defibrilator

Basic Life Support

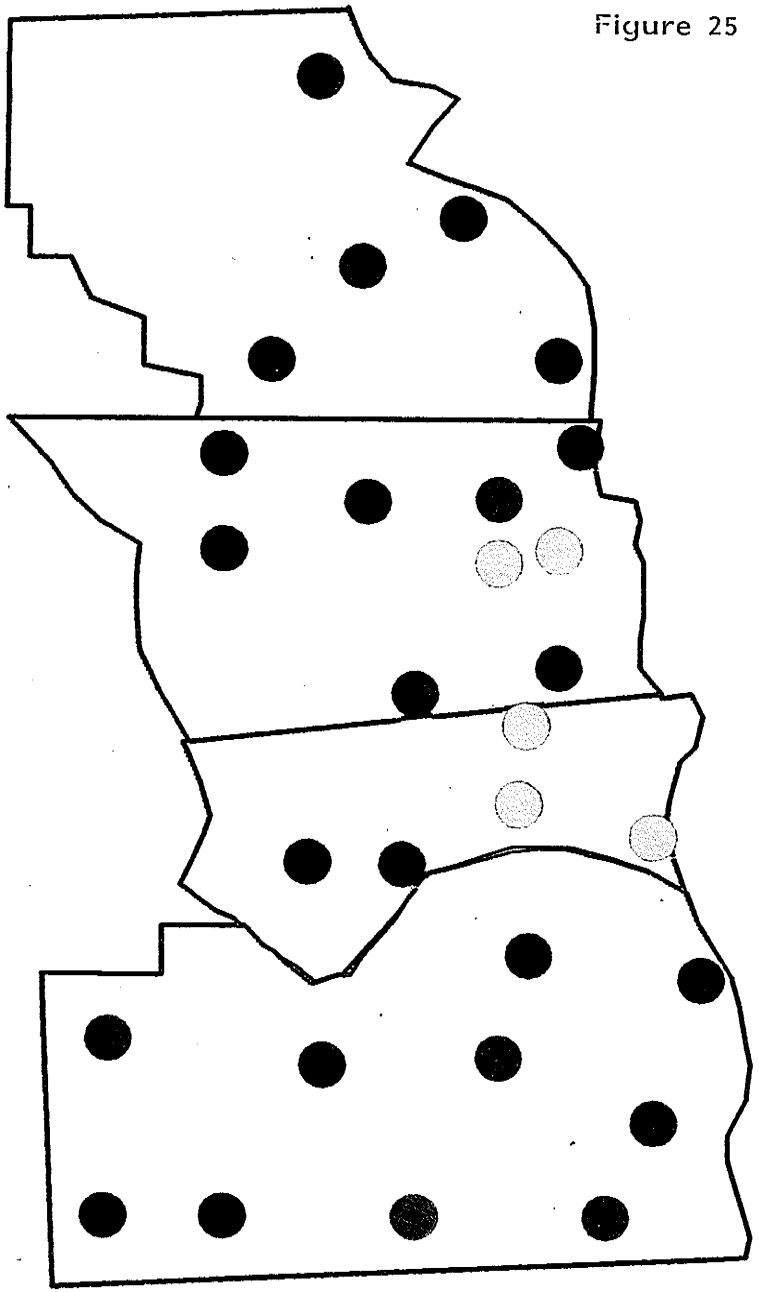
First Responder

First Responder/Auto Def

NORTH CENTRAL

Figure 25

METRO



- Advanced Life Support
- Automatic Defibrilator
- Basic Life Support
- First Responder

Figure 26

SOUTHEAST

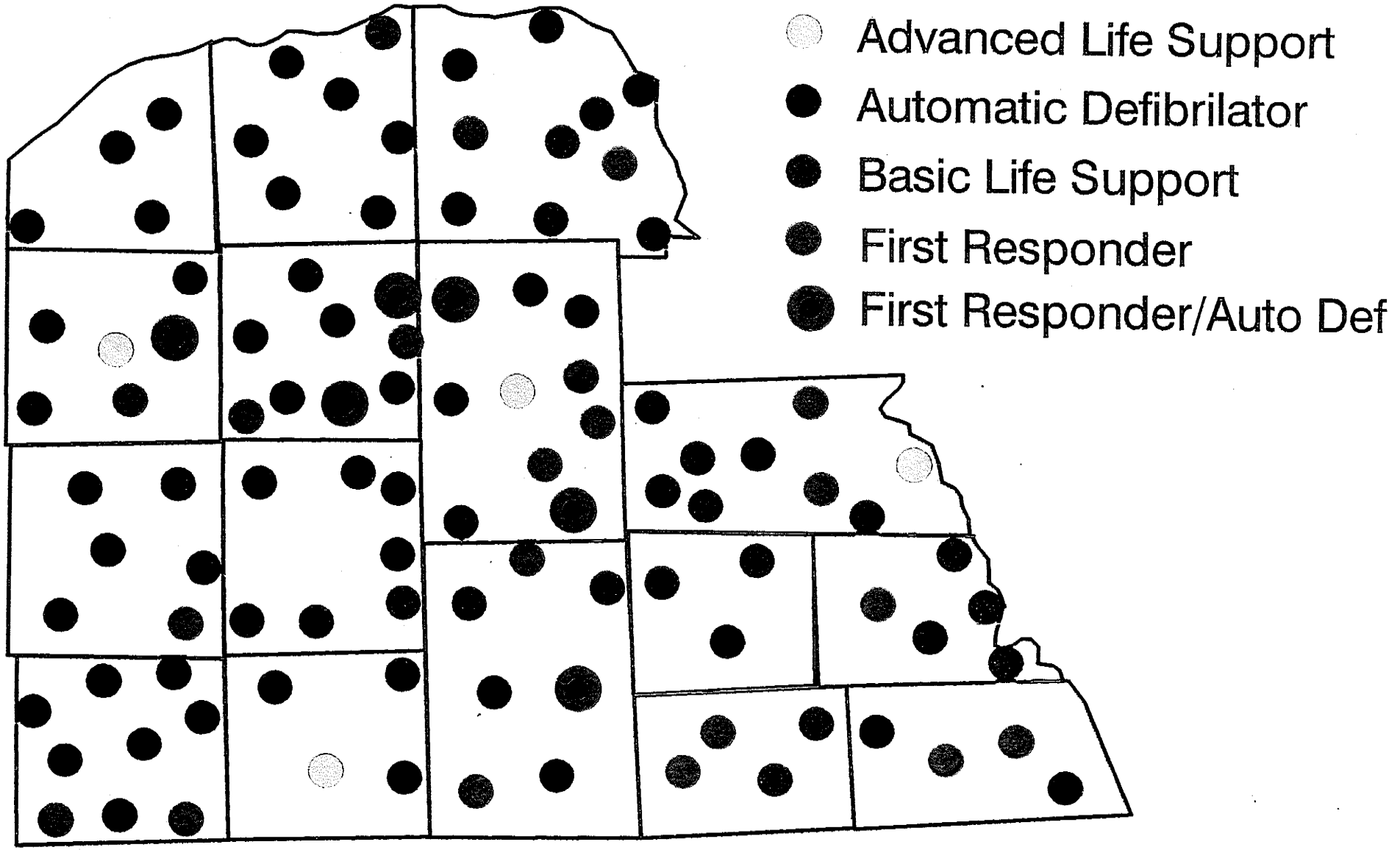


Table 2

Emergency Medical Personnel and Services in each Nebraska County

County	EMT's	EMT A/D's	EMT-I's	Paramedics	AM Svcs	FR Svcs.	A/D Svcs.	Hospital Beds/County
01 Adams	123	14	2	8	8	2	1	437
02 Antelope	101	38	0	0	4	0	3	74
03 Arthur	33	0	0	0	1	0	0	
04 Banner	16	0	0	0	1	0	0	
05 Blaine	11	0	0	0	1	0	0	
06 Boone	63	46	0	0	5	0	3	42
07 Box Butte	55	30	0	1	2	0	2	50
08 Boyd	45	14	0	10	3	0	1	31
09 Brown	17	0	0	1	2	0	0	29
10 Buffalo	157	61	8	10	7	0	3	287
11 Burt	94	9	0	1	5	0	1	27
12 Butler	132	90	0	0	9	2	6	37
13 Cass	163	99	3	2	12	2	6	
14 Cedar	82	51	0	0	5	0	3	
15 Chase	39	0	2	0	2	0	0	31
16 Cherry	68	18	0	0	2	0	1	
17 Cheyenne	60	0	0	1	4	0	0	
18 Clay	133	63	1	1	7	0	4	
19 Colfax	78	60	0	0	4	0	4	55
20 Cuming	76	49	0	1	4	0	3	59
21 Custer	162	65	1	0	10	1	4	149

Emergency Medical Personnel and Services in each Nebraska County

County	EMT's	EMT A/D's	EMT-I's	Paramedics	AM Svcs	FR Svcs.	A/D Svcs.	Hospital Beds/County
22 Dakota	60	34	0	0	3	0	2	
23 Dawes	51	0	0	0	2	0	0	73
24 Dawson	114	97	0	0	7	0	6	136
25 Deuel	40	39	0	0	2	0	2	
26 Dixon	114	71	0	0	7	2	3	65
27 Dodge	203	68	11	3	10	1	4	277
28 Douglas	1205	534	18	133	18	3	7	3765
29 Dundy	37	16	0	0	2	0	1	17
30 Fillmore	87	22	0	0	8	2	1	61
31 Franklin	102	23	1	0	5	2	1	24
32 Frontier	56	49	2	1	3	0	3	
33 Furnas	89	64	0	0	5	0	5	61
34 Gage	122	38	0	0	7	3	2	652
35 Garden	17	0	0	0	2	0	0	56
36 Garfield	25	13	0	0	1	0	1	63
37 Gosper	38	35	0	0	2	1	2	
38 Grant	16	0	1	0	1	0	0	
39 Greeley	47	0	0	0	4	0	0	
40 Hall	142	74	6	28	5	2	2	233
41 Hamilton	48	34	3	1	5	4	3	86
42 Harlan	55	63	0	1	4	0	4	25

Emergency Medical Personnel and Services in each Nebraska County

County	EMT's	EMT A/D's	EMT-I's	Paramedics	AM Svcs	FR Svcs.	A/D Svcs.	Hospital Beds/County
43 Hayes	15	11	0	0	1	0	1	
44 Hitchcock	81	52	3	1	4	0	4	
45 Holt	129	107	0	0	6	0	5	78
46 Hooker	18	16	0	0	1	0	1	38
47 Howard	110	39	0	0	5	2	1	44
48 Jefferson	63	27	0	1	4	0	2	36
49 Johnson	51	15	0	0	3	0	1	35
50 Kearney	55	31	1	0	4	0	2	88
51 Keith	71	30	0	0	3	0	2	49
52 Keya Paha	9	0	0	0	1	0	0	
53 Kimball	27	16	1	0	2	1	1	24
54 Knox	168	102	0	0	7	1	5	81
55 Lancaster	730	318	14	34	12	7	7	1373
56 Lincoln	120	31	11	8	5	0	3	128
57 Logan	25	0	0	0	1	0	0	
58 Loup	20	11	0	0	1	0	1	
59 McPherson	14	6	16	10	1	0	0	
60 Madison	169	47	0	0	7	0	3	417
61 Merrick	81	62	0	0	5	1	4	87
62 Morrill	36	1	0	0	3	0	0	23
63 Nance	56	36	0	0	2	0	2	83

Emergency Medical Personnel and Services in each Nebraska County

County	EMT's	EMT A/D's	EMT-I's	Paramedics	AM Svcs	FR Svcs.	A/D Svcs.	Hospital Beds/County
64 Nemaha	82	13	1	1	7	1	1	42
65 Nuckolls	53	7	0	0	4	0	1	57
66 Otoe	142	50	0	2	9	2	2	73
67 Pawnee	48	0	0	0	3	1	0	27
68 Perkins	52	25	0	0	2	1	1	80
69 Phelps	45	0	1	0	3	0	0	62
70 Pierce	56	35	0	0	3	0	2	74
71 Platte	139	70	0	0	7	0	4	93
72 Polk	57	48	2	1	4	0	4	24
73 Red Willow	101	25	2	10	5	0	1	
74 Richadson	81	61	0	0	4	2	2	83
75 Rock	34	1	0	0	2	1	0	47
76 Saline	162	55	0	0	8	0	2	142
77 Sarpy	283	169	6	25	5	0	5	225
78 Saunders	184	74	2	1	11	2	5	103
79 Scottsbluff	148	29	4	14	6	0	3	299
80 Seward	129	60	0	0	12	6	6	100
81 Sheridan	63	46	0	1	3	0	3	86
82 Sherman	37	11	0	0	4	1	1	
83 Sioux	13	0	0	0	1	0	0	
84 Stanton	38	22	1	1	2	0	1	

Emergency Medical Personnel and Services in each Nebraska County

County	EMT's	EMT A/D's	EMT-I's	Paramedics	AM Svcs	FR Svcs.	A/D Svcs.	Hospital Beds/County
85 Thayer	90	61	1	0	9	1	8	28
86 Thomas	15	0	0	0	1	0	0	
87 Thurston	75	0	1	0	6	0	0	49
88 Valley	43	18	0	0	4	1	2	104
89 Washington	128	47	1	4	5	0	3	54
90 Wayne	49	15	1	2	4	1	1	40
91 Webster	34	0	1	1	3	0	0	16
92 Wheeler	8	9	0	0	1	0	1	
93 York	92	32	5	3	6	3	3	121
Total	8,905	3,922	134	323	423	62	201	11,716

LB 1223

Figure 27

Sec. 82. For purposes of the Nebraska Trauma Systems Development Act:

(1) Board shall mean the Nebraska Trauma Systems Development Board created by section 83 of this act;

(2) Department shall mean the Department of Health;

(3) Trauma shall mean a single or multisystem life-threatening or limb-threatening injury requiring immediate medical or surgical intervention or treatment to prevent death or permanent disability; and

(4) Trauma care system shall mean a part of the health care system from time of initial injury to appropriate level of care, rehabilitation, and functioning as a member of the community at the maximum level of wellness and shall include prevention.

Sec. 83. (1) There is hereby created the Nebraska Trauma Systems Development Board. The board shall be an advisory board to the department and shall consist of fifteen members who have a demonstrated interest in trauma care systems development. The board shall be appointed by the Director of Health and shall be broadly representative of trauma prevention and care providers and shall be from as geographically diverse regions as possible. The board shall be composed of two prehospital providers, two emergency medical physicians, two hospital administrators, and two surgeons. One member from each of such categories shall be from a rural area, and one member from each of such categories shall be from an urban area. The board shall also be composed of one physician board-certified in physical medicine and rehabilitation, one registered nurse involved in rehabilitation, including speech therapy, occupational therapy, or physical therapy, one person involved in prevention education, two nurses active in trauma care, and two persons representing the public who have no affiliation with prehospital, hospital, or rehabilitation services. The board shall terminate on January 1, 1996.

(2) The board shall elect a chairperson from its membership. Board members shall be reimbursed for their actual and necessary expenses as provided in sections 81-1174 to 81-1177.

Sec. 84. The board shall advise the department on the development of a trauma care system plan to carry out the purpose of the Nebraska Trauma Systems Development Act and shall work with the department to implement the plan.

Sec. 85. The department shall:

(1) Coordinate the planning and development of a trauma care system plan; and

(2) Present the plan to the Legislature and the Governor on or before November 1, 1994, for the development of the statewide trauma care system. The plan shall include, but not be limited to, designation of standards for trauma centers, trauma care systems management, development of a data collection system, standardized forms, and ways to improve trauma care and rehabilitation. The plan shall also include timelines for the development of each aspect of the plan and shall include all elements necessary for an effective trauma care system, including a trauma registry.

Sec. 86. That section 71-7501, Revised Statutes Supplement, 1992, be amended to read as follows:

71-7501. Sections 71-7501 to 71-7521 and sections 88, 93 to 101, and 103 to 110 of this act shall be known and may be cited as the Community Public Health Services Care Act.

Sec. 87. That section 71-7502, Revised Statutes Supplement, 1992, be amended to read as follows:

71-7502. (1) The Legislature finds that Nebraska's health care needs and strengths vary in different areas of the state and that, while a statewide effort is needed to meet the health care needs of Nebraskans and to support a statewide infrastructure, Nebraska's communities, on both an individual and a collective basis, are in the best situation to address local needs. The purpose of the Community Health Care Act is to provide a mechanism on a state level to support the needs of communities to meet their health care needs.

(2) The Legislature finds that one purpose of the Community Public Health Services Care Act is to authorize a delivery mechanism to provide community public health services statewide. The act is not intended to create an entitlement to any activities described in the act, and the Department of Health may perform the activities described in the act to the extent funds are available. The act is not intended to displace local public health departments currently in existence or to discourage the establishment of new local public health departments but rather to provide community public health services to individuals who do not have access to services from a local public health department. The Legislature believes that all individuals should have access to basic community public health services.

not more than ~~four~~ five hundred dollars;

(c) For reinstatement of license, ten dollars;

(d) For a temporary permit, an amount not less than twenty-five dollars and not more than one hundred dollars;

(e) For a certified statement that a licensee is licensed in this state, a fee of twenty-five dollars, and for verification that a licensee is licensed in this state, a fee of five dollars; and

(f) For a duplicate license, ten dollars.

(2) Any applicant whose application is rejected by the department or withdrawn by the applicant shall be allowed the return of his or her fee except for an administrative fee of twenty-five dollars to be retained by the department.

Sec. 79. That section 71-7423, Revised Statutes Supplement, 1992, be amended to read as follows:

71-7423. A wholesale drug distributor license may be denied, refused renewal, suspended, limited, or revoked by the Director of Health when the director finds that the licensee has violated any provisions of the Wholesale Drug Distributor Licensing Act or of the rules and regulations adopted under the act or has committed any acts or offenses set forth in section 71-147 or 71-148. ~~Disciplinary~~ All actions and proceedings shall be carried out as specified in sections 71-147 to 71-161.19.

For purposes of this section, licensee shall include, but not be limited to, the board of directors, chief executive officer, and other officers of the applicant or the entity to which the license is issued and the manager of each site if more than one site is located in this state.

Sec. 80. Sections 80 to 85 of this act shall be known and may be cited as the Nebraska Trauma Systems Development Act.

Sec. 81. The Legislature finds that trauma is recognized as the leading killer of persons from one to forty-four years of age and is a serious yet preventable disease. The State of Nebraska incurs a massive expense from trauma in lives lost and productive years destroyed. The experience of other states has shown that a comprehensive trauma system, including all phases of trauma care, such as education, prevention, prehospital care, trauma center designation, and rehabilitative care, can vastly improve outcome.

It is the intent of the Nebraska Trauma Systems Development Act to designate the Department of Health to be responsible for the coordination and integration of all state activities concerning complete trauma care system organization and functioning. It is also the intent of the act to provide for the planning and development of prompt, efficient, and effective emergency trauma care, a well-coordinated trauma care system, effective communication between prehospital care providers and hospitals, and the safe handling and transportation of the sick and injured. Such system is intended to promote the public health, safety, and welfare by providing for the creation of a statewide trauma care system with standards for all providers of trauma services.

Sec. 82. For purposes of the Nebraska Trauma Systems Development Act:

(1) Board shall mean the Nebraska Trauma Systems Development Board created by section 83 of this act;

(2) Department shall mean the Department of Health;

(3) Trauma shall mean a single or multisystem life-threatening or limb-threatening injury requiring immediate medical or surgical intervention or treatment to prevent death or permanent disability; and

(4) Trauma care system shall mean a part of the health care system from time of initial injury to appropriate level of care, rehabilitation, and functioning as a member of the community at the maximum level of wellness and shall include prevention.

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rehabilitation services. The board shall terminate on January 1, 1996.

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Sec. 88. It is the intent of the Legislature:

(1) That Nebraska be able to be innovative and creative in addressing its health care needs on a local basis and on a state basis;

(2) To the extent possible, to plan, design, and evaluate the health care delivery system at the local level and to involve representatives from all sections of the community, including public and private entities; and

(3) That state efforts in assessment, policy development, and quality assurance support the local communities in meeting their health care needs.

Sec. 89. That section 71-7503, Revised Statutes Supplement, 1992, be amended to read as follows:

71-7503. For purposes of the Community ~~Public~~ Health ~~Services~~ Care Act, the definitions found in sections 71-7504 to 71-7515 and section 104 of this act may be used.

Sec. 90. That section 71-7514, Revised Statutes Supplement, 1992, be amended to read as follows:

71-7514. Region shall mean a community ~~public~~ health ~~services~~ care region established under section 71-7516 under the operation of the department.

Sec. 91. That section 71-7516, Revised Statutes Supplement, 1992, be amended to read as follows:

71-7516. There ~~is hereby authorized the establishment of six~~ are hereby authorized to be established community ~~public~~ health ~~services~~ care regions. The director may determine the composition of such regions after facilitating a discussion among all areas of the state in order to determine a rational configuration of counties for each region. In establishing the lines of each region, the department may take into consideration current health care

Figure 29

Nebraska Department of Health

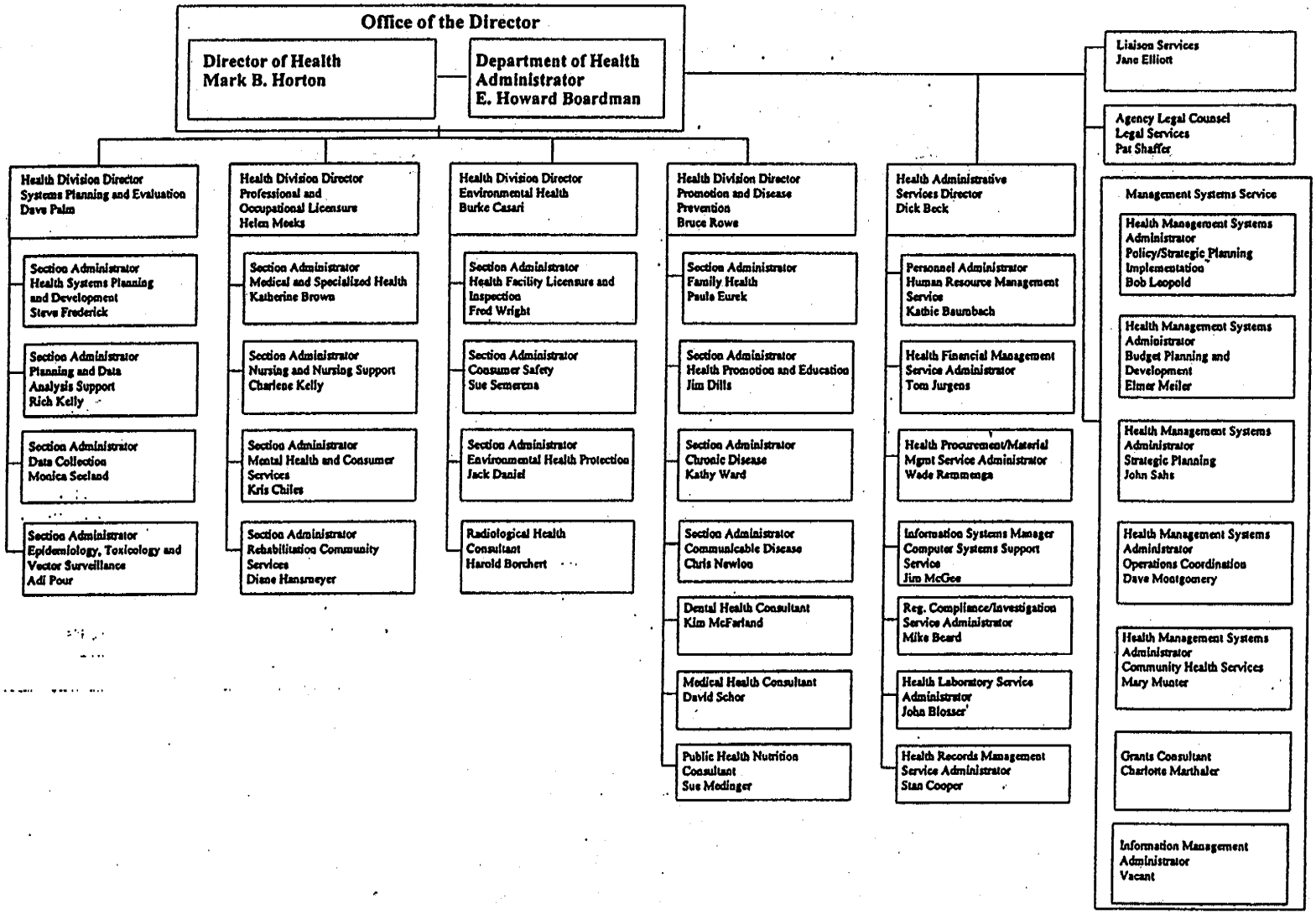

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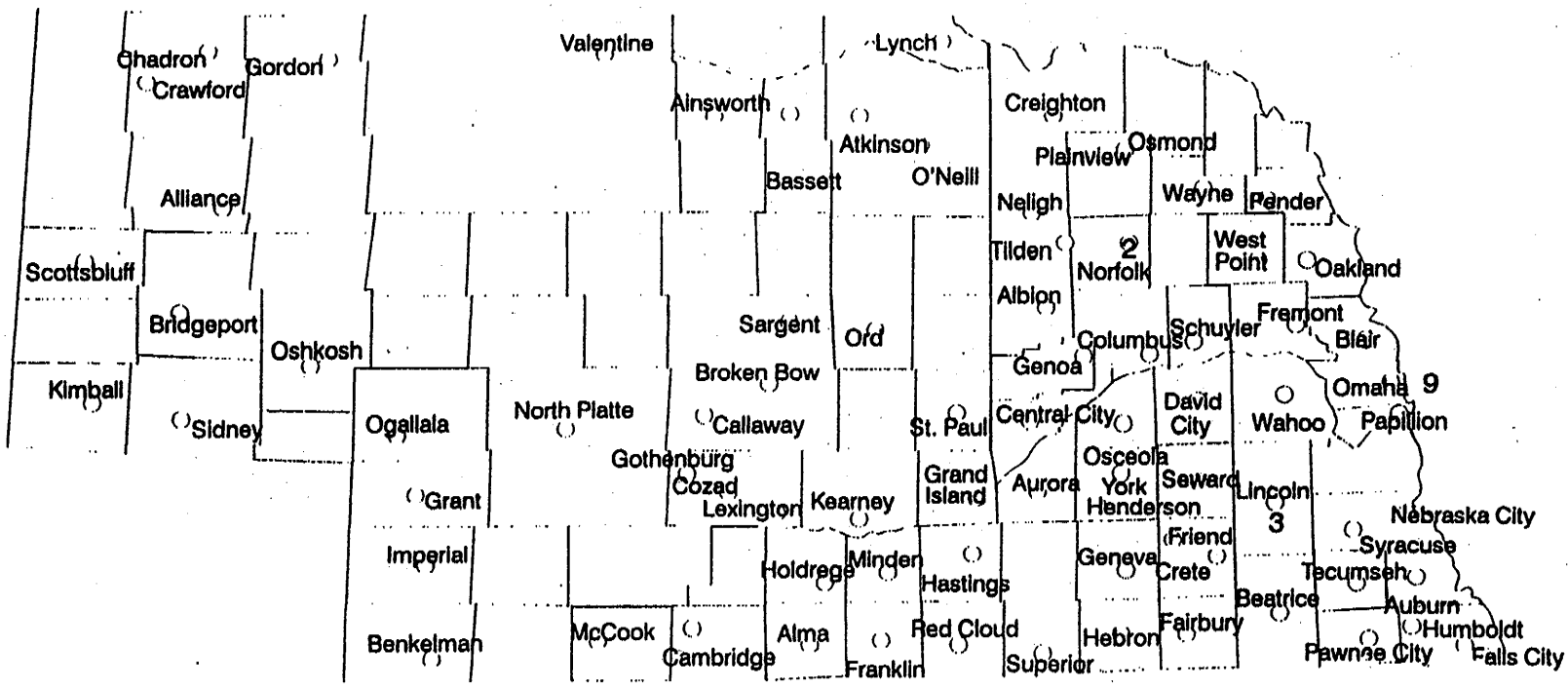
Figure 28

Nebraska's Community Hospitals, 1996



91 Nebraska Licensed Acute Care Hospitals, 12/95

* In addition there are 4 hospitals licensed with acute care beds, but they are restricted access facilities. Three Veterans Administration hospitals(Grand Island, Lincoln and Omaha), and one Indialn Health Services hospital (Winnebago).

Nebraska Department of Health
Office of Rural Health

Table 3

NEBRASKA HOSPITALS AND CORRESPONDING COUNTY

(Adams)
Hastings Regional Center

(Adams)
Mary Lanning Memorial Hospital

(Antelope)
Antelope Memorial Hospital

(Antelope)
Tilden Community Hospital

(Boone)
Boone County Health Center

(Box Butte)
Box Butte General Hospital

(Boyd)
Niobrara Valley Hospital Corporation

(Brown)
Brown County Hospital

(Buffalo)
Richard H. Young Hospital

(Buffalo)
Good Samaritan Hospital

(Burt)
Oakland Memorial Hospital

(Butler)
Butler County Health Care Center

(Chase)
Chase County Community Hospital

(Cherry)
Cherry County Hospital

(Cheyenne)
Memorial Health Center

(Colfax)
Memorial Hospital, Inc.

(Cuming)
St. Francis Memorial Hospital

(Custer)
Sargent District Hospital

(Custer)
Callaway District Hospital

(Custer)
Jennie M. Melham Memorial Med. Ctr., Inc.

(Dawes)
Legend Buttes Health Services

(Dawes)
Chadron Community Hospital

(Dawson)
Gothenburg Memorial Hospital

(Dawson)
Tri-County Area Hospital District

(Dawson)
Cozad Community Hospital

(Dixon)
Wakefield Health Care Center

(Douglas)
Saint Joseph Hospital

(Douglas)
The Nebraska Methodist Hospital

(Douglas)
Methodist Richard Young

(Douglas)
Saint Joseph Center for Mental Health

(Douglas)
Douglas County Hospital

(Douglas)
Immanuel Medical Center

(Douglas)
Boys Town National Research Hospital

(Douglas)
Children's Memorial Hospital

(Douglas)
Bergan Mercy Medical Center

(Douglas)
Bishop Clarkson Memorial Hospital

(Douglas)
University of Nebraska Medical Center

(Dundy)
Dundy County Hospital

(Franklin)
Franklin County Memorial Hospital

(Gage)
Beatrice Comm. Hospital & Health Center

(Gage)
Beatrice Comm. Hospital/Parkview Center

(Garfield)
Community Memorial Health Center

(Hall)
St. Francis Memorial Health Center

(Hamilton)
Memorial Hospital

(Holt)
St. Anthony's Hospital

(Howard)
Howard County Community Hospital

(Johnson)
Johnson County Hospital

(Keith)
Ogallala Community Hospital

(Knox)
Creighton Area Health Services

(Lancaster)
Lincoln Corr Ctr-Eval Unit Hosp & Clinic

(Lancaster)
Nebraska State Penitentiary Hosp. & Clinic

(Lancaster)
Lincoln Regional Center

(Lincoln)
Great Plains Regional Medical Center

(Madison)
Lutheran Community Hospital

(Dodge)
Fremont Area Medical Center

(Fillmore)
Fillmore County Hospital

(Furnas)
Tri Valley Health System

(Gage)
Beatrice State Developmental Center

(Garden)
Garden County Hospital & Nursing Home

(Hall)
St. Francis Medical Center

(Harlan)
Harlan County Hospital

(Holt)
West Holt Memorial Hospital, Inc.

(Hooker)
Pioneer Memorial Community Hospital Ass'n.

(Jefferson)
Jefferson Community Health Center, Inc.

(Kearney)
Kearney County Health Services

(Kimball)
Kimball County Hospital

(Lancaster)
Bryan Memorial Hospital

(Lancaster)
Lincoln General Hospital

(Lancaster)
St. Elizabeth Community Health Center

(Lancaster)
Madonna Rehabilitation Hospital

(Madison)
Our Lady of Lourdes Hospital

(Madison)
Norfolk Regional Center

(Merrick)
itzenberg Memorial County Hospital

(Nance)
Genoa Community Hospital/LTC

(Nuckolls)
Brodstone Memorial Nuckolls Co. Hospital

(Otoe)
St. Mary's Hospital

(Perkins)
Perkins County Health Services

(Pierce)
Osmond General Hospital

(Pierce)
Plainview Public Hospital

(Red Willow)
Community Hospital

(Richardson)
Community Medical Center, Inc.

Saline)
Crete Municipal Hospital

(Sarpy)
Midlands Community Hospital

(Scotts Bluff)
Regional West Medical Center - North Unit

(Seward)
Memorial Hospital

(Sheridan)
Parkview Lodge

(Thayer)
Thayer County Memorial Hospital

(Valley)
Valley County Hospital

(Wayne)
Providence Medical Center

(York)
York General Hospital

(Morrill)
Morrill County Community Hospital

(Nemaha)
Nemaha County Hospital

(Otoe)
Community Memorial Hospital

(Pawnee)
Pawnee County Memorial Hospital

(Phelps)
Phelps Memorial Health Center

(Polk)
Annie Jeffrey Memorial County Health Center

(Platte)
Columbus Community Hospital, Inc.

(Richardson)
Community Memorial Hospital, Inc.

(Rock)
Rock County Hospital

(Saline)
Warren Memorial Hospital

(Saunders)
Saunders County Community Hospital/LTC

(Scotts Bluff)
Regional West Medical Center - South Unit

(Seward)
Rivendell Psychiatric Center of Nebraska

(Sheridan)
Gordon Memorial Hospital District

(Thurston)
Pender Community Hospital

(Washington)
Memorial Community Hospital

(Webster)
Webster County Community Hospital

(York)
Henderson Health Care Services, Inc.

1995 HOSPITAL TRAUMA SURVEY SUMMARY REPORT

Of the 95 hospitals responding, three are certified as Level II by the State of Nebraska. One of these three is certified by the American College of Surgeons (ACS). One hospital is ACS Certified as a Level III.

DO YOU CURRENTLY HAVE:	Available
1. Trauma Program Director	16%
2. Trauma Multidisciplinary Committee	5%
3. Hospital Departments/Divisions/Sections	
a. General Surgery	64%
b. Neurologic Surgery	16%
c. Orthopedic Surgery	31%
d. Emergency Medicine	85%
e. Anesthesia	69%

	24 hrs.	15 min.	30 min.
4. In-House 24 Hours/Day:			
a. General Surgery	9%	11%	11%
b. Neurologic Surgery	1%	5%	3%
c. Emergency Medicine	47%	7%	3%
d. Anesthesiology	14%	11%	12%

	Available	15 min.	30 min.
5. On-call and promptly available:			
a. Anesthesiology	75%	19%	37%
b. Cardiac Surgery	13%	5%	6%
c. Cardiology	32%	13%	11%
d. General Surgery	72%	20%	37%
e. Hand Surgery	21%	6%	12%
f. Infectious Disease	39%	13%	13%
g. Internal Medicine	42%	13%	14%
h. Microvascular Surgery (replant/flaps)	14%	5%	7%
i. Neurologic Surgery	15%	6%	6%
j. Obstetric/Gynecologic Surgery	62%	19%	25%
k. Ophthalmic Surgery	28%	13%	9%
l. Oral/Maxillofacial/Plastic Surgery	24%	12%	7%
m. Orthopedic Surgery	38%	12%	17%

DO YOU CURRENTLY HAVE:	Available	15 min.	30 min.
n. Pediatric Surgery	27%	11%	8%
o. Pediatrics	42%	14%	9%
p. Plastic Surgery	13%	5%	6%
q. Pulmonary Medicine	25%	12%	8%
r. Radiology	57%	22%	13%
s. Thoracic Surgery	19%	8%	7%
t. Urologic Surgery	27%	8%	12%

	Available
6. Emergency Department (ED)	
a. Designated physician director	60%
b. Physician who has special competence and who is a designated member of the trauma team and is physically present in the ED 24 hours a day.	24%
c. Nursing personnel with special capability in trauma care who provide continual monitoring of the trauma patient from hospital arrival to disposition in ICU, OR,or patient care unit.	60%
7. Equipment for resuscitation of patients of all ages :	
a. Airway control and ventilation equipment, including laryngoscopes and endotracheal tubes of all sizes,bag-mask resuscitator, pocket masks, and oxygen	96%
b. Pulse oximetry	97%
c. End-tidal CO_2 determination	64%
d. Suction devices	100%
e. Electrocardiograph-oscilloscope-defibrillator	96%
f. Apparatus to establish central venous pressure monitoring	55%
g. Standard intravenous fluids and administration devices, including large bore intravenous catheters	96%
h. Sterile surgical sets for	
1. Airway control/Cricothyrotomy	92%
2. Thoracotomy	74%
3. Vascular access	76%
4. Chest decompression	78%
i. Gastric decompression	87%

DO YOU CURRENTLY HAVE:

	Available
j. Drugs necessary for emergency care	98%
k. X-ray availability 24 hour/day	95%
l. Two-way communication with vehicles of emergency transport system	99%
m. Skeletal traction devices including capability for cervical traction	67%
n. Arterial catheters	48%
o. Thermal control equipment	
1. For patient	67%
2. For blood and fluids	63%
3. For blood and fluids	54%
8. Operating room adequately staffed in-house and immediately available 24 hours/day.	64%

	Adult	Ped
9. Equipment:		
a. Cardiopulmonary bypass capability	11%	5%
b. Operating microscope	43%	21%
c. Thermal control equipment		
1. for patient	59%	43%
2. for blood and fluids	53%	36%
d. X-ray capability including c-arm image intensifier 24 hours/day	40%	26%
e. Endoscopes	66%	26%
f. Craniotomy instruments	16%	13%
g. Equipment appropriate for fixation of long bone and pelvic fractures.	46%	28%

	Available
10. Postanesthetic recovery room (surgical intensive care unit is acceptable)	
a. Registered nurses and other essential personnel available 24 hours/day	92%
b. Equipment for the continuous monitoring of temperature, hemodynamics and gas exchange	78%
c. Equipment for the continuous monitoring of intracranial pressure.	20%
d. Pulse oximetry	95%
e. End-Tidal CO_2 determination	60%
f. Thermal control	61%

DO YOU CURRENTLY HAVE:	Available
11. Intensive care units (ICUs) for trauma patients	
a. Personnel	
1. Designated surgical director for trauma patients	24%
2. Physician, with privileges in critical care and approved by the trauma director	35%
b. Equipment	
1. Appropriate monitoring and resuscitation equipment	79%
c. Support Services	
1. Immediate access to clinical diagnostic services	66%
12. Acute hemodialysis capability or transfer protocol	19%
13. Organized burn care	
a. Physician-directed burn center staffed by nursing personnel trained in burn care and equipped properly for care of the extensively burned patient	7%
b. Transfer agreement with burn center.	36%
14. Acute spinal cord/head injury management capability	
a. In circumstances in which a designatedspinal cord injury rehabilitation center exists in the region, early transfer should be considered; transfer agreements should be in effect	26%
b. In circumstances in which a head injury centre exists in the region, transfer should be considered in selected patients; transfer agreements should be in effect	25%
15. Radiological special capabilities	
a. In-house radiology technician	87%
b. Angiography	27%
c. Sonography	53%
d. Nuclear scanning	31%
e. Computerized tomography(CT)	40%
f. In-house CT technician	26%
g. Neuroradiology	14%
16. Rehabilitation	
a. Rehabilitation service staffed by personnel trained in rehabilitation care and equipped properly for acute care of the critically injured patient	25%
b. Full in-house service or transfer protocol to a licensed rehabilitation service with demonstrated ability for management of spinal cord injury and/or acute brain injury	31%

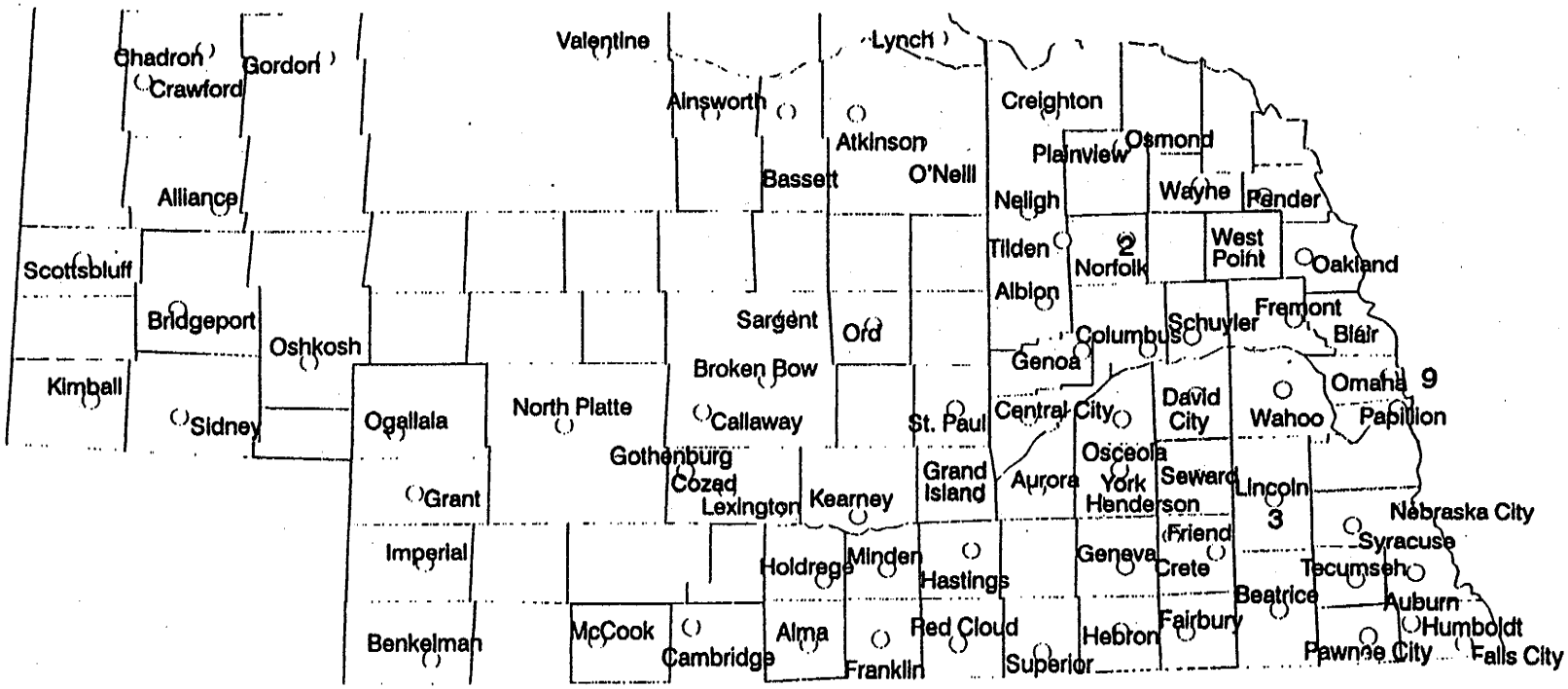
DO YOU CURRENTLY HAVE:	24 hrs.	15 min.	30 min.	N/A
17. Clinical laboratory service (available 24 hours a day)				
a. Standard analyses of blood, urine, and body fluids	58%	34%	5%	2%
b. Blood typing and cross-matching	56%	33%	7%	2%
c. Coagulation studies	57%	33%	6%	2%
d. Comprehensive blood bank or access to a community central blood bank and adequate storage facilities	58%	21%	8%	9%
e. Blood gases and pH determinations	55%	29%	7%	6%
f. Microbiology	45%	21%	5%	26%
g. Drug and alcohol level & urine toxology screening	44%	29%	4%	39%
h. Carboxin/aspirin screening kits	31%	21%	3%	57%

18. Quality Improvement	Available
a. Trauma Registry.	23%
b. Special audit for all trauma deaths	33%
c. Morbidity and mortality review	61%
d. Trauma conference, multidisciplinary	21%
e. Medical nursing audit, utilization review, tissue review	62%
f. Review of prehospital trauma care	29%
g. Published on-call schedule must be maintained for surgeons, neurosurgeons, orthopedic surgeons, and other major surgeons.	51%
h. Times and reasons for trauma-related bypass must be documented and reviewed by quality improvement program	15%
i. Quality improvement personnel dedicated to and specific for the trauma program	17%
19. Outreach Program	
a. Telephone and on-site consultations with physicians of the community and outlying areas	58%
20. Prevention/Public Education	
a. Epidemiology Research	
1. Conduct trauma related research	13%
2. Collaborate with other institutions in research	18%

DO YOU CURRENTLY HAVE:	Available
3. Monitor progress of prevention programs	15%
4. Consult with qualified researchers on evaluation measures	14%
b. Surveillance	
1. Special ED and field collection projects	12%
2. Expanded trauma registry data	7%
3. Minimal trauma registry data	13%
c. Prevention	
1. Designated prevention coordinator	8%
2. Outreach activities and program development	17%
3. Information resource	21%
4. Collaboration with existing national, regional and State programs	24%
21. Trauma Research Program	
a. Organized program with designated director	3%
b. Regular meeting of research group	2%
c. Evidence of productivity	
1. Proposals reviewed by IRB	1%
2. Presentation at local/regional/ntl meetings	2%
3. Publications in peer-reviewed journals	2%
22. Continuing Education	
Formal programs in continuing education provided for:	
a. Staff/Community Physicians	56%
b. Nurses	69%
c. Allied health personnel	59%
d. Community physicians	47%
e. EMS personnel	52%
23. Trauma Service Support Personnel	
a. Trauma coordinator	12%
24. Organ Procurement Activity	56%
25. Transfer Agreements	
a. As transferring facility	36%
b. As receiving facility	27%

Figure 28

Nebraska's Community Hospitals, 1996



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Nebraska Department of Health
Office of Rural Health

Figure 29

Nebraska Department of Health

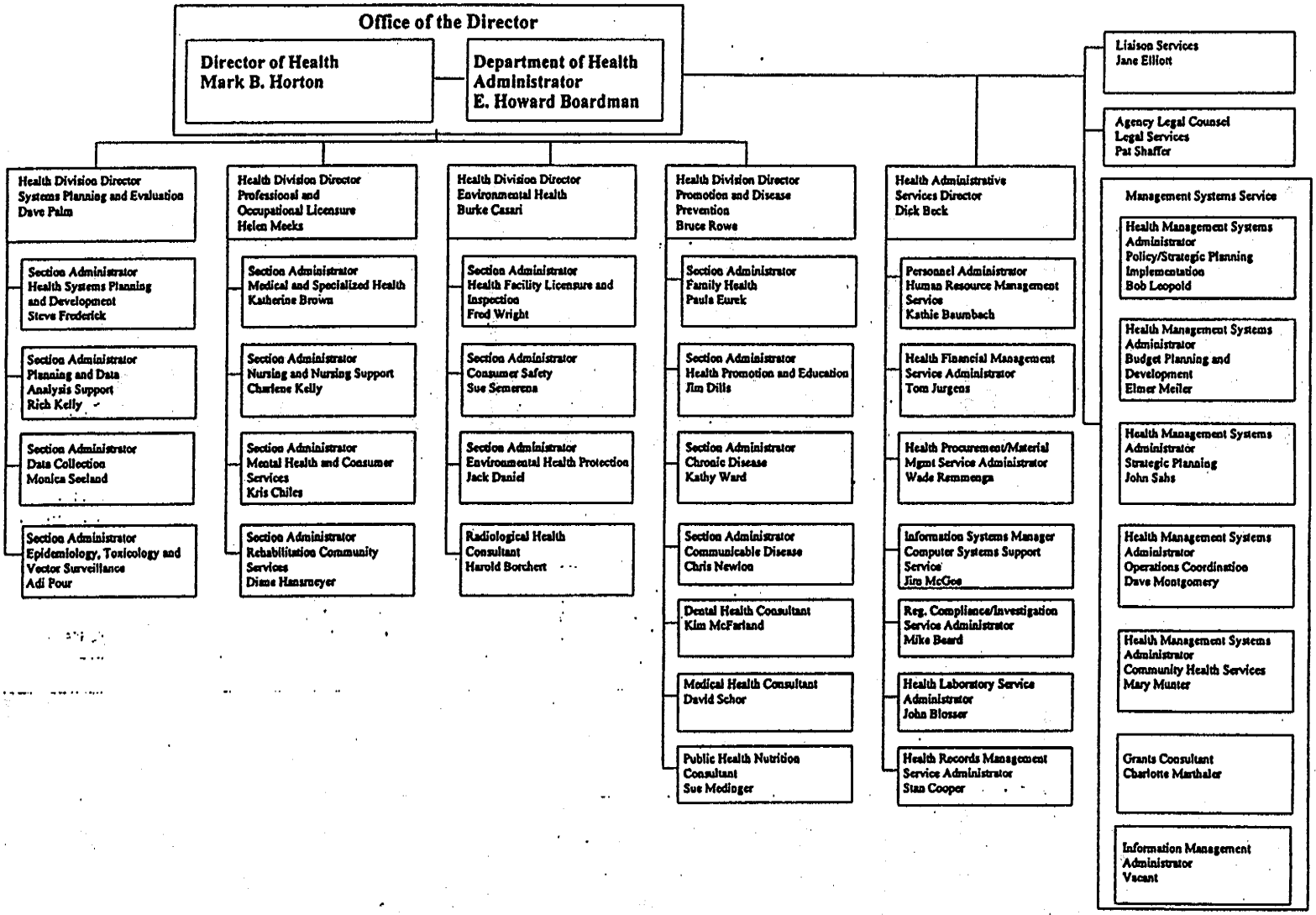

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Table 3 NEBRASKA HOSPITALS AND CORRESPONDING COUNTY

(Adams)
Hastings Regional Center

(Antelope)
Antelope Memorial Hospital

(Boone)
Boone County Health Center

(Boyd)
Niobrara Valley Hospital Corporation

(Buffalo)
Richard H. Young Hospital

(Burt)
Oakland Memorial Hospital

(Chase)
Chase County Community Hospital

(Cheyenne)
Memorial Health Center

(Cuming)
St. Francis Memorial Hospital

(Custer)
Callaway District Hospital

(Dawes)
Legend Buttes Health Services

(Dawson)
Gothenburg Memorial Hospital

(Dawson)
Cozad Community Hospital

(Douglas)
Saint Joseph Hospital

(Douglas)
Methodist Richard Young

(Douglas)
Douglas County Hospital

(Douglas)
Boys Town National Research Hospital

(Douglas)
Bergan Mercy Medical Center

(Adams)
Mary Lanning Memorial Hospital

(Antelope)
Tilden Community Hospital

(Box Butte)
Box Butte General Hospital

(Brown)
Brown County Hospital

(Buffalo)
Good Samaritan Hospital

(Butler)
Butler County Health Care Center

(Cherry)
Cherry County Hospital

(Colfax)
Memorial Hospital, Inc.

(Custer)
Sargent District Hospital

(Custer)
Jennie M. Melham Memorial Med. Ctr., Inc.

(Dawes)
Chadron Community Hospital

(Dawson)
Tri-County Area Hospital District

(Dixon)
Wakefield Health Care Center

(Douglas)
The Nebraska Methodist Hospital

(Douglas)
Saint Joseph Center for Mental Health

(Douglas)
Immanuel Medical Center

(Douglas)
Children's Memorial Hospital

(Douglas)
Bishop Clarkson Memorial Hospital

Douglas)
niversity of Nebraska Medical Center

(Dundy)
Dundy County Hospital

(Franklin)
Franklin County Memorial Hospital

(Gage)
Beatrice Comm. Hospital & Health Center

(Gage)
Beatrice Comm. Hospital/Parkview Center

(Garfield)
Community Memorial Health Center

(Hall)
St. Francis Memorial Health Center

(Hamilton)
Memorial Hospital

(Holt)
St. Anthony's Hospital

Howard)
Howard County Community Hospital

(Johnson)
Johnson County Hospital

(Keith)
Ogallala Community Hospital

(Knox)
Creighton Area Health Services

(Lancaster)
Lincoln Corr Ctr-Eval Unit Hosp & Clinic

(Lancaster)
Nebraska State Penitentiary Hosp. & Clinic

(Lancaster)
Lincoln Regional Center

(Lincoln)
Great Plains Regional Medical Center

(Madison)
utheran Community Hospital

(Dodge)
Fremont Area Medical Center

(Fillmore)
Fillmore County Hospital

(Furnas)
Tri Valley Health System

(Gage)
Beatrice State Developmental Center

(Garden)
Garden County Hospital & Nursing Home

(Hall)
St. Francis Medical Center

(Harlan)
Harlan County Hospital

(Holt)
West Holt Memorial Hospital, Inc.

(Hooker)
Pioneer Memorial Community Hospital Ass'n.

(Jefferson)
Jefferson Community Health Center, Inc.

(Kearney)
Kearney County Health Services

(Kimball)
Kimball County Hospital

(Lancaster)
Bryan Memorial Hospital

(Lancaster)
Lincoln General Hospital

(Lancaster)
St. Elizabeth Community Health Center

(Lancaster)
Madonna Rehabilitation Hospital

(Madison)
Our Lady of Lourdes Hospital

(Madison)
Norfolk Regional Center

(Merrick)
.itzenberg Memorial County Hospital

(Nance)
Genoa Community Hospital/LTC

(Nuckolls)
Brodstone Memorial Nuckolls Co. Hospital

(Otoe)
St. Mary's Hospital

(Perkins)
Perkins County Health Services

(Pierce)
Osmond General Hospital

(Pierce)
Plainview Public Hospital

(Red Willow)
Community Hospital

(Richardson)
Community Medical Center, Inc.

Saline)
Crete Municipal Hospital

(Sarpy)
Midlands Community Hospital

(Scotts Bluff)
Regional West Medical Center - North Unit

(Seward)
Memorial Hospital

(Sheridan)
Parkview Lodge

(Thayer)
Thayer County Memorial Hospital

(Valley)
Valley County Hospital

(Wayne)
Providence Medical Center

(York)
York General Hospital

(Morrill)
Morrill County Community Hospital

(Nemaha)
Nemaha County Hospital

(Otoe)
Community Memorial Hospital

(Pawnee)
Pawnee County Memorial Hospital

(Phelps)
Phelps Memorial Health Center

(Polk)
Annie Jeffrey Memorial County Health Center

(Platte)
Columbus Community Hospital, Inc.

(Richardson)
Community Memorial Hospital, Inc.

(Rock)
Rock County Hospital

(Saline)
Warren Memorial Hospital

(Saunders)
Saunders County Community Hospital/LTC

(Scotts Bluff)
Regional West Medical Center - South Unit

(Seward)
Rivendell Psychiatric Center of Nebraska

(Sheridan)
Gordon Memorial Hospital District

(Thurston)
Pender Community Hospital

(Washington)
Memorial Community Hospital

(Webster)
Webster County Community Hospital

(York)
Henderson Health Care Services, Inc.

Table 4

STATE OF NEBRASKA
INCIDENCE AND SEVERITY OF TRAFFIC CRASHES

YEAR	FATAL CRASHES	KILLED	INJURY CRASHES	PERSONAL INJURIES	PDO CRASHES	TOTAL CRASHES	LICENSED DRIVERS	REGISTERED VEHICLES	ESTIMATED ^ POPULATION	V.M.T. MILLIONS	FATALITY RATE
1967	365	445	11,978	17,399	24,673	36,116	894,012	1,001,479	1,435,000	8,707	5.11
1968	371	452	11,938	18,487	28,140	40,449	920,000	1,029,309	1,439,000	8,953	5.05
1969	359	422	12,687	19,699	33,685	46,731	1,030,000	1,070,307	1,449,000	9,200	4.59
1970	334	412	12,851	19,394	32,129	45,278	1,015,700	1,091,150	1,483,791	9,600	4.29
1971	390	489	13,883	21,058	31,189	45,462	1,033,000	1,126,749 #	1,512,000	9,903	4.94
1972	405	485	15,140	22,853	33,867	49,412	1,007,000	1,188,919	1,525,000	10,798	4.49
1973	373	433	15,214	22,467	32,124	47,711	1,100,000	1,260,523	1,542,000	11,153	3.88
1974	328	388	13,417	19,572	20,168	33,913	1,044,347	1,319,708	1,543,000	10,940	3.55
1975	322	376	14,054	20,693	24,599	38,975	1,065,529	1,346,549 #	1,542,000	11,211	3.35
1976	335	402	14,775	21,721	25,072	40,182	1,025,990	1,387,382 #	1,553,000	11,843	3.39
1977	293	350	15,770	23,203	28,344	44,407	1,027,893	1,440,263 #	1,561,155	12,100	2.89
1978	299	350	16,348	23,861	34,155	50,802	1,081,821	1,482,411 *	1,565,390	12,486	2.80
1979	277	330	14,838	22,470	33,706	48,821	1,098,232	1,432,735 *	1,573,946	11,529	2.86
1980	337	396	14,083	21,281	30,265	44,685	1,116,720	1,524,207 *	1,569,825	11,222	3.53
1981	321	378	13,302	20,275	28,826	42,449	1,106,821	1,433,162 *	1,577,000	11,512	3.28
1982	226	261	13,279	19,840	30,768	44,273	1,101,661	1,448,775 *	1,586,000	11,436	2.28
1983	221	255	13,317	19,885	34,756	48,294	1,113,362	1,491,149 *	1,597,000	11,534	2.21
1984	250	285	13,322	20,000	33,092	46,664	1,109,434	1,488,573 *	1,606,000	11,934	2.39
1985	207	237	13,842	20,163	33,860	47,909	1,107,320	1,488,083 *	1,605,574	12,054	1.97
1986	259	290	13,508	19,818	23,029	36,796	1,116,073	1,504,623 *	1,598,000	12,630	2.30
1987	255	297	14,567	21,917	23,248	38,070	1,084,761	1,546,307 *	1,594,000	13,091	2.27
1988	234	261	14,892	22,214	24,272	39,398	1,107,368	1,576,061 *	1,602,000	13,371	1.95
1989	257	296	15,499	23,089	26,229	41,985	1,104,780	1,617,380 *	1,611,000	13,781	2.16
1990	220	262	15,501	23,288	25,579	41,300	1,088,753	1,636,147 *	1,578,385	13,957	1.86
1991	242	275	15,287	22,898	26,242	41,771	1,105,323	1,502,045 +	1,580,950	14,095	2.00
1992	223	270	14,932	22,227	25,043	40,198	1,128,888	1,620,635 *	1,582,900	14,581	1.90
1993	223	254	16,865	26,117	26,734	43,822	1,141,134	1,699,317 *	1,590,450	14,777	1.70
1994	**229**	**271**	**18,053**	**28,205**	**25,940**	**44,222**	**1,151,764**	**1,736,410 ***	**1,622,858**	**15,193**	**1.80**
AVG	291	344	14,398	21,575	28,562	43,218	1,072,417	1,410,370	1,572,129	11,914	3.03

^ Nebraska Department of Health Vital Statistics

NA – Not Available

Note: Gov't Vehicles Not Included

* Note: Includes Nebraska Based Commercial Vehicles from 1978 On

+ Note: Registration information is under reported due to a delay in entering data into the system. Using 1990 data may more accurately represent state vehicle information.

Prepared by: Nebraska Office of Highway Safety
Department of Motor Vehicles 3/30/95

Table 5

STATE OF NEBRASKA
HISTORY OF
ALCOHOL-RELATED TRAFFIC ENFORCEMENT AND CRASHES

YEAR	DWI ARRESTS	A/R CONVICTIONS	CONVICTION RATE	TOTAL CRASHES	A/R CRASHES	FATAL CRASHES	A/R FATAL CRASHES	INJURY CRASHES	A/R INJURY CRASHES	TOTAL INJURED	A/R INJURED	TOTAL DEATHS	A/R DEATHS	*DEATH RATE
1975	7,347	5,942	80.9%	38,975	3,908	322	90	14,054	2,006	20,693	N/A	376	90	3.3
1976	8,002	5,117	63.9%	40,182	4,185	335	108	14,775	2,233	21,721	N/A	402	108	3.4
1977	8,203	5,629	68.6%	44,407	4,520	293	104	15,770	2,326	23,203	N/A	350	104	2.9
1978	8,558	6,422	75.0%	50,802	3,533	299	111	16,348	1,744	23,861	N/A	350	111	2.8
1979	9,433	6,682	70.8%	48,821	3,835	277	103	14,838	1,855	22,470	3,171	330	122	2.8
1980	7,972	5,972	74.9%	44,685	3,919	337	129	14,083	1,892	21,281	2,228	396	159	3.5
1981	8,383	6,144	73.3%	42,449	3,675	321	149	13,302	1,805	20,275	2,268	378	189	3.3
1982	10,033	7,441	74.2%	44,273	3,364	226	88	13,279	1,657	19,840	2,759	261	102	2.3
1983	10,598	8,222	77.6%	48,294	3,324	221	89	13,317	1,646	19,885	2,601	255	109	2.2
1984	11,536	8,010	69.4%	46,664	3,416	250	93	13,322	1,720	20,000	2,630	285	112	2.4
1985	11,601	7,496	64.6%	47,909	3,053	207	81	13,842	1,507	20,163	2,368	237	91	2.0
1986	10,926	5,889	53.9%	36,796	2,734	259	112	13,506	1,552	19,818	2,459	290	123	2.3
1987	9,921	5,515	55.6%	38,070	2,664	255	99	14,567	1,567	21,917	2,521	297	117	2.3
1988	11,343	7,813	68.9%	39,398	2,608	234	108	14,892	1,448	22,214	2,495	261	121	2.0
1989	11,923	6,815	57.2%	41,985	2,580	257	102	15,499	1,475	23,089	2,381	296	113	2.1
1990	14,403	8,092	56.2%	41,300	2,609	220	82	15,501	1,501	23,288	2,400	262	102	1.9
1991	14,234	7,216	50.7%	41,771	2,500	242	94	15,287	1,380	22,898	2,226	275	104	2.0
1992	14,631	7,941	54.3%	40,198	2,223	223	79	14,932	1,281	22,227	2,087	270	92	1.9
1993	12,149	6,682	55.0%	43,831	1,975	223	88	16,865	1,107	26,117	1,904	254	100	1.7
1994	12,925	6,170	47.7%	44,222	2,181	229	85	18,053	1,242	28,205	2,036	271	101	1.8

Note: * = Deaths per 100 Million Miles of Travel
Note: A/R = Alcohol Related
N/A – Not Available

Prepared by: Nebraska Office of Highway Safety
11/28/95 Department of Motor Vehicles
301 Centennial Mall South
Lincoln, NE 68509

NEBRASKA Highway Safety PROGRAM

1995 AMBULANCE TRAUMA SURVEY SUMMARY REPORT

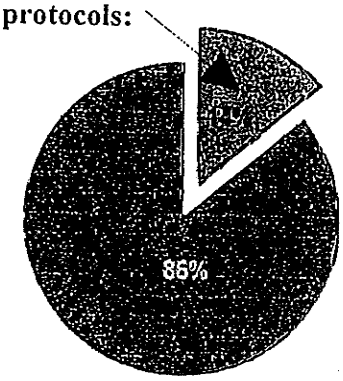
Services licensed in ALS:

Paramedic	8%
EMT-I	9%
EMT-D	13%

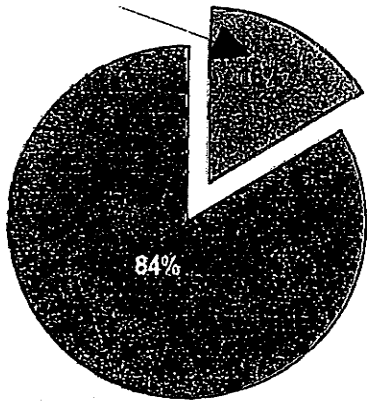
Services licensed in BLS:

First Responder	16%
Emergency Medical Technician	85%
Automatic Defibrillator	44%

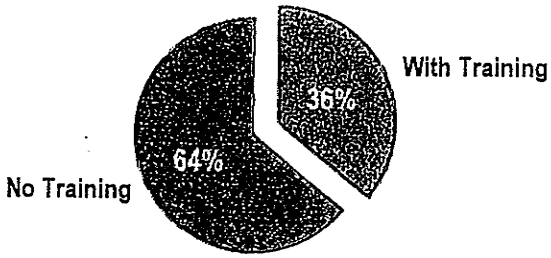
Services with written trauma triage and transport protocols:



Services with written trauma patient care protocols:

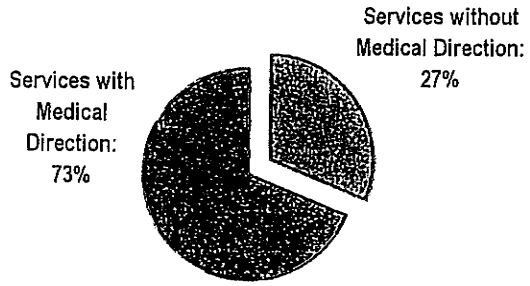


Dispatchers Having EMD Training

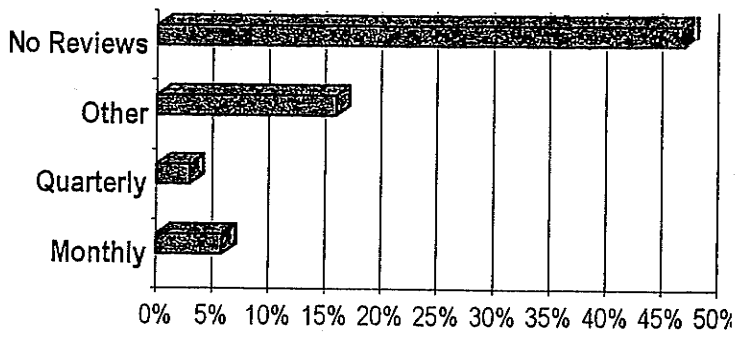


Services with own base radio: 66%

Medical Direction:



Receiving hospitals reviewing trauma cases with service: 25%



1995 HOSPITAL TRAUMA SURVEY SUMMARY REPORT

Of the 95 hospitals responding, three are certified as Level II by the State of Nebraska. One of these three is certified by the American College of Surgeons (ACS). One hospital is ACS Certified as a Level III.

DO YOU CURRENTLY HAVE:	Available
1. Trauma Program Director	16%
2. Trauma Multidisciplinary Committee	5%
3. Hospital Departments/Divisions/Sections	
a. General Surgery	64%
b. Neurologic Surgery	16%
c. Orthopedic Surgery	31%
d. Emergency Medicine	85%
e. Anesthesia	69%

4. In-House 24 Hours/Day:	24 hrs.	15 min.	30 min.
a. General Surgery	9%	11%	11%
b. Neurologic Surgery	1%	5%	3%
c. Emergency Medicine	47%	7%	3%
d. Anesthesiology	14%	11%	12%

5. On-call and promptly available:	Available	15 min.	30 min.
a. Anesthesiology	75%	19%	37%
b. Cardiac Surgery	13%	5%	6%
c. Cardiology	32%	13%	11%
d. General Surgery	72%	20%	37%
e. Hand Surgery	21%	6%	12%
f. Infectious Disease	39%	13%	13%
g. Internal Medicine	42%	13%	14%
h. Microvascular Surgery (replant/flaps)	14%	5%	7%
i. Neurologic Surgery	15%	6%	6%
j. Obstetric/Gynecologic Surgery	62%	19%	25%
k. Ophthalmic Surgery	28%	13%	9%
l. Oral/Maxillofacial/Plastic Surgery	24%	12%	7%
m. Orthopedic Surgery	38%	12%	17%

DO YOU CURRENTLY HAVE:	Available	15 min.	30 min.
n. Pediatric Surgery	27%	11%	8%
o. Pediatrics	42%	14%	9%
p. Plastic Surgery	13%	5%	6%
q. Pulmonary Medicine	25%	12%	8%
r. Radiology	57%	22%	13%
s. Thoracic Surgery	19%	8%	7%
t. Urologic Surgery	27%	8%	12%

	Available
6. Emergency Department (ED)	
a. Designated physician director	60%
b. Physician who has special competence and who is a designated member of the trauma team and is physically present in the ED 24 hours a day.	24%
c. Nursing personnel with special capability in trauma care who provide continual monitoring of the trauma patient from hospital arrival to disposition in ICU, OR,or patient care unit.	60%
7. Equipment for resuscitation of patients of all ages :	
a. Airway control and ventilation equipment, including laryngoscopes and endotracheal tubes of all sizes,bag-mask resuscitator, pocket masks, and oxygen	96%
b. Pulse oximetry	97%
c. End-tidal CO_2 determination	64%
d. Suction devices	100%
e. Electrocardiograph-oscilloscope-defibrillator	96%
f. Apparatus to establish central venous pressure monitoring	55%
g. Standard intravenous fluids and administration devices, including large bore intravenous catheters	96%
h. Sterile surgical sets for	
1. Airway control/Cricothyrotomy	92%
2. Thoracotomy	74%
3. Vascular access	76%
4. Chest decompression	78%
i. Gastric decompression	87%

DO YOU CURRENTLY HAVE:

	Available
j. Drugs necessary for emergency care	98%
k. X-ray availability 24 hour/day	95%
l. Two-way communication with vehicles of emergency transport system	99%
m. Skeletal traction devices including capability for cervical traction	67%
n. Arterial catheters	48%
o. Thermal control equipment	
1. For patient	67%
2. For blood and fluids	63%
3. For blood and fluids	54%
8. Operating room adequately staffed in-house and immediately available 24 hours/day.	64%

	Adult	Ped
9. Equipment:		
a. Cardiopulmonary bypass capability	11%	5%
b. Operating microscope	43%	21%
c. Thermal control equipment		
1. for patient	59%	43%
2. for blood and fluids	53%	36%
d. X-ray capability including c-arm image intensifier 24 hours/day	40%	26%
e. Endoscopes	66%	26%
f. Craniotomy instruments	16%	13%
g. Equipment appropriate for fixation of long bone and pelvic fractures.	46%	28%

	Available
10. Postanesthetic recovery room (surgical intensive care unit is acceptable)	
a. Registered nurses and other essential personnel available 24 hours/day	92%
b. Equipment for the continuous monitoring of temperature, hemodynamics and gas exchange	78%
c. Equipment for the continuous monitoring of intracranial pressure.	20%
d. Pulse oximetry	95%
e. End-Tidal CO_2 determination	60%
f. Thermal control	61%

DO YOU CURRENTLY HAVE:	Available
11. Intensive care units (ICUs) for trauma patients	
a. Personnel	
1. Designated surgical director for trauma patients	24%
2. Physician, with privileges in critical care and approved by the trauma director	35%
b. Equipment	
1. Appropriate monitoring and resuscitation equipment	79%
c. Support Services	
1. Immediate access to clinical diagnostic services	66%
12. Acute hemodialysis capability or transfer protocol	19%
13. Organized burn care	
a. Physician-directed burn center staffed by nursing personnel trained in burn care and equipped properly for care of the extensively burned patient	7%
b. Transfer agreement with burn center.	36%
14. Acute spinal cord/head injury management capability	
a. In circumstances in which a designatedspinal cord injury rehabilitation center exists in the region, early transfer should be considered; transfer agreements should be in effect	26%
b. In circumstances in which a head injury centre exists in the region, transfer should be considered in selected patients; transfer agreements should be in effect	25%
15. Radiological special capabilities	
a. In-house radiology technician	87%
b. Angiography	27%
c. Sonography	53%
d. Nuclear scanning	31%
e. Computerized tomography(CT)	40%
f. In-house CT technician	26%
g. Neuroradiology	14%
16. Rehabilitation	
a. Rehabilitation service staffed by personnel trained in rehabilitation care and equipped properly for acute care of the critically injured patient	25%
b. Full in-house service or transfer protocol to a licensed rehabilitation service with demonstrated ability for management of spinal cord injury and/or acute brain injury	31%

DO YOU CURRENTLY HAVE:	24 hrs.	15 min.	30 min.	N/A
17. Clinical laboratory service (available 24 hours a day)				
a. Standard analyses of blood, urine, and body fluids	58%	34%	5%	2%
b. Blood typing and cross-matching	56%	33%	7%	2%
c. Coagulation studies	57%	33%	6%	2%
d. Comprehensive blood bank or access to a community central blood bank and adequate storage facilities	58%	21%	8%	9%
e. Blood gases and pH determinations	55%	29%	7%	6%
f. Microbiology	45%	21%	5%	26%
g. Drug and alcohol level & urine toxology screening	44%	29%	4%	39%
h. Carboxin/aspirin screening kits	31%	21%	3%	57%

18. Quality Improvement	Available
a. Trauma Registry.	23%
b. Special audit for all trauma deaths	33%
c. Morbidity and mortality review	61%
d. Trauma conference, multidisciplinary	21%
e. Medical nursing audit, utilization review, tissue review	62%
f. Review of prehospital trauma care	29%
g. Published on-call schedule must be maintained for surgeons, neurosurgeons, orthopedic surgeons, and other major surgeons.	51%
h. Times and reasons for trauma-related bypass must be documented and reviewed by quality improvement program	15%
i. Quality improvement personnel dedicated to and specific for the trauma program	17%
19. Outreach Program	
a. Telephone and on-site consultations with physicians of the community and outlying areas	58%
20. Prevention/Public Education	
a. Epidemiology Research	
1. Conduct trauma related research	13%
2. Collaborate with other institutions in research	18%

DO YOU CURRENTLY HAVE:	Available
3. Monitor progress of prevention programs	15%
4. Consult with qualified researchers on evaluation measures	14%
b. Surveillance	
1. Special ED and field collection projects	12%
2. Expanded trauma registry data	7%
3. Minimal trauma registry data	13%
c. Prevention	
1. Designated prevention coordinator	8%
2. Outreach activities and program development	17%
3. Information resource	21%
4. Collaboration with existing national, regional and State programs	24%
21. Trauma Research Program	
a. Organized program with designated director	3%
b. Regular meeting of research group	2%
c. Evidence of productivity	
1. Proposals reviewed by IRB	1%
2. Presentation at local/regional/ntl meetings	2%
3. Publications in peer-reviewed journals	2%
22. Continuing Education	
Formal programs in continuing education provided for:	
a. Staff/Community Physicians	56%
b. Nurses	69%
c. Allied health personnel	59%
d. Community physicians	47%
e. EMS personnel	52%
23. Trauma Service Support Personnel	
a. Trauma coordinator	12%
24. Organ Procurement Activity	56%
25. Transfer Agreements	
a. As transferring facility	36%
b. As receiving facility	27%

1995 REHABILITATION SERVICES QUESTIONNAIRE SUMMARY REPORT

Total surveyed: 95

Certification:

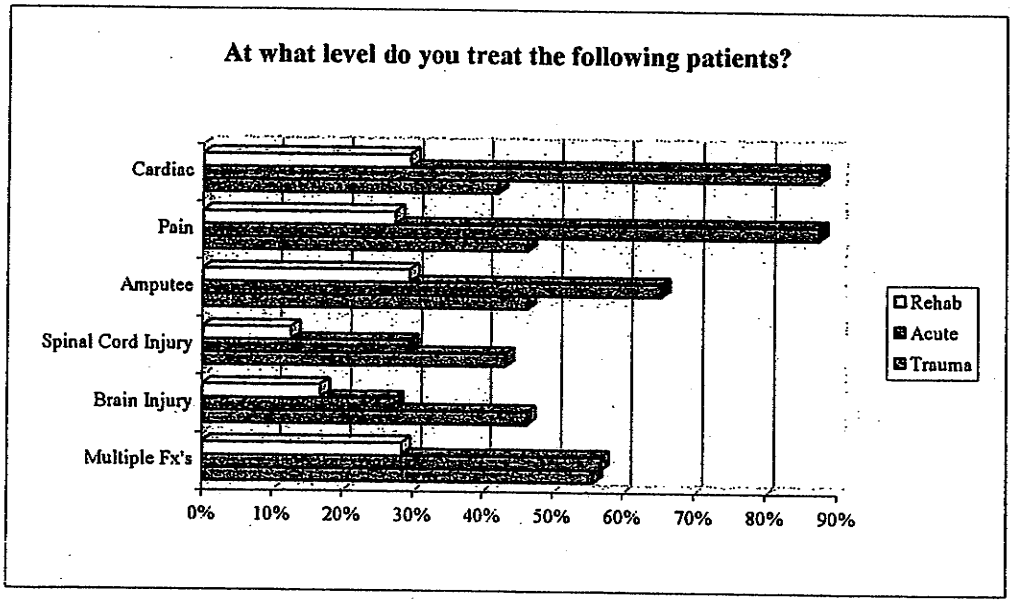
JCAHO	35%
CARF	6%
Comprehensive Inpatient-Category I II III	7%
Spinal Cord Injury	1%
Brain Injury-Medical Inpatient	1%
Brain Injury-Community Integrated	0%
Outpatient	6%

Number of Acute Beds:

25 or less:	35%
26-50:	40%
51-75:	4%
76-100:	4%
More than 100	17%

Average Occupancy of Acute Beds:

1-5:	21%
6-10:	18%
11-15:	17%
16-20:	7%
21-25:	0%
More than 25:	19%



1995 HOSPITAL TRAUMA SURVEY RAW DATA REPORT

Of the 95 hospitals responding, three are certified as Level II by the State of Nebraska. One of these three is certified by the American College of Surgeons (ACS). One hospital is ACS Certified as a Level III.

DO YOU CURRENTLY HAVE:	24 hrs.	15 min.	30 min.	NA
1. Trauma Program Director	6%	4%	4%	82%
2. Trauma Multidisciplinary Committee	5%	0%	0%	87%
3. Hospital Departments/Divisions/Sections				
a. General Surgery	21%	17%	26%	23%
b. Neurologic Surgery	8%	4%	3%	69%
c. Orthopedic Surgery	14%	7%	9%	52%
d. Emergency Medicine	58%	19%	8%	12%
e. Anesthesia	23%	18%	28%	19%
4. In-House 24 Hours/Day:				
a. General Surgery	9%	11%	11%	55%
b. Neurologic Surgery	1%	5%	3%	75%
c. Emergency Medicine	47%	7%	3%	36%
d. Anesthesiology	14%	11%	12%	52%
5. On-call and promptly available:				
a. Anesthesiology	19%	19%	37%	17%
b. Cardiac Surgery	1%	5%	6%	78%
c. Cardiology	8%	13%	11%	58%
d. General Surgery	15%	20%	37%	21%
e. Hand Surgery	3%	6%	12%	67%
f. Infectious Disease	14%	13%	13%	54%
g. Internal Medicine	16%	13%	14%	47%
h. Microvascular Surgery (replant/flaps)	1%	5%	7%	76%
i. Neurologic Surgery	2%	6%	6%	76%
j. Obstetric/Gynecologic Surgery	18%	19%	25%	33%
k. Ophthalmic Surgery	6%	13%	9%	62%
l. Oral/Maxillofacial/Plastic Surgery	5%	12%	7%	67%
m. Orthopedic Surgery	9%	12%	17%	54%
n. Pediatric Surgery	8%	11%	8%	65%
o. Pediatrics	19%	14%	9%	49%
p. Plastic Surgery	1%	5%	6%	77%
q. Pulmonary Medicine	5%	12%	8%	66%
r. Radiology	22%	22%	13%	36%
s. Thoracic Surgery	3%	8%	7%	71%
t. Urologic Surgery	7%	8%	12%	64%

DO YOU CURRENTLY HAVE:	24 hrs.	15 min.	30 min.	NA
6. Emergency Department (ED)				
a. Designated physician director	36%	16%	8%	28%
b. Physician who has special competence and who is a designated member of the trauma team and is physically present in the ED 24 hours a day.	19%	5%	0%	66%
c. Nursing personnel with special capability in trauma care who provide continual monitoring of the trauma patient from hospital arrival to disposition in ICU, OR,or patient care unit.	51%	5%	4%	33%
7. Equipment for resuscitation of patients of all ages :				
a. Airway control and ventilation equipment, including laryngoscopes and endotracheal tubes of all sizes,bag-mask resuscitator, pocket masks, and oxygen	94%	1%	1%	4%
b. Pulse oximetry	95%	2%	0%	3%
c. End-tidal CO_2 determination	57%	3%	4%	23%
d. Suction devices	99%	1%	0%	0%
e. Electrocardiograph-oscilloscope-defibrillator	97%	1%	0%	2%
f. Apparatus to establish central venous pressure monitoring	49%	4%	1%	35%
g. Standard intravenous fluids and administration devices, including large bore intravenous catheters	97%	1%	0%	2%
h.. Sterile surgical sets for				
1. Airway control/Cricothyrotomy	91%	1%	0%	4%
2. Thoracotomy	71%	2%	1%	21%
3. Vascular access	76%	0%	0%	17%
4. Chest decompression	77%	1%	0%	17%
i. Gastric decompression	86%	1%	0%	7%
j. Drugs necessary for emergency care	97%	1%	0%	1%
k. X-ray availability 24 hour/day	71%	20%	4%	2%
l. Two-way communication with vehicles of emergency transport system	98%	1%	0%	0%
m. Skeletal traction devices including capability for cervical traction	64%	1%	2%	24%
n. Arterial catheters	46%	1%	1%	42%

DO YOU CURRENTLY HAVE:	24 hrs.	15 min.	30 min.	NA
o. Thermal control equipment				
1. For patient	66%	1%	0%	28%
2. For blood and fluids	61%	1%	1%	32%
3. For blood and fluids	51%	1%	2%	37%
8. Operating room adequately staffed in-house and immediately available 24 hours/day.	18%	20%	26%	27%

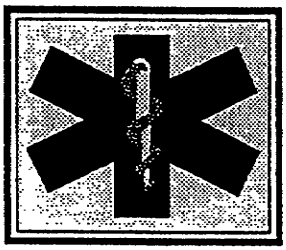
	Adult	Ped	No
9. Equipment*:			
a. Cardiopulmonary bypass capability	11%	5%	86%
b. Operating microscope	43%	21%	49%
c. Thermal control equipment			
1. for patient	59%	43%	33%
2. for blood and fluids	53%	36%	37%
d. X-ray capability including c-arm image intensifier 24 hours/day	40%	26%	52%
e. Endoscopes	66%	26%	27%
f. Craniotomy instruments	16%	13%	74%
g. Equipment appropriate for fixation of long bone and pelvic fractures.	46%	28%	48%

	24 hrs.	15 min.	30 min.	NA
10. Postanesthetic recovery room (surgical intensive care unit is acceptable)				
a. Registered nurses and other essential personnel available 24 hours/day	76%	11%	5%	5%
b. Equipment for the continuous monitoring of temperature, hemodynamics and gas exchange	75%	3%	0%	19%
c. Equipment for the continuous monitoring of intracranial pressure.	19%	1%	0%	73%
d. Pulse oximetry	94%	1%	0%	4%
e. End-Tidal CO_2 determination	53%	5%	2%	33%
f. Thermal control	59%	1%	1%	33%

*In Section 9, hospitals surveyed may have indicated both Adult and Ped.

DO YOU CURRENTLY HAVE:	24 hrs.	15 min.	30 min.	NA
11. Intensive care units (ICUs) for trauma patients				
a. Personnel				
1. Designated surgical director for trauma patients	14%	8%	2%	68%
2. Physician, with privileges in critical care and approved by the trauma director	16%	16%	3%	54%
b. Equipment				
1. Appropriate monitoring and resuscitation equipment	74%	4%	1%	16%
c. Support Services				
1 Immediate access to clinical diagnostic services	48%	11%	7%	26%
12. Acute hemodialysis capability or transfer protocol	15%	1%	3%	71%
13. Organized burn care				
a. Physician-directed burn center staffed by nursing personnel trained in burn care and equipped properly for care of the extensively burned patient	4%	2%	1%	85%
b. Transfer agreement with burn center.	32%	3%	1%	54%
14. Acute spinal cord/head injury management capability				
a. In circumstances in which a designated spinal cord injury rehabilitation center exists in the region, early transfer should be considered; transfer agreements should be in effect	23%	2%	1%	65%
b. In circumstances in which a head injury centre exists in the region, transfer should be considered in selected patients; transfer agreements should be in effect	24%	1%	0%	67%
15. Radiological special capabilities				
a. In-house radiology technician	27%	47%	13%	9%
b. Angiography	6%	11%	11%	66%
c. Sonography	11%	24%	18%	39%
d. Nuclear scanning	9%	6%	15%	58%
e. Computerized tomography(CT)	15%	13%	13%	48%
f. In-house CT technician	5%	16%	5%	65%
g. Neuroradiology	4%	4%	5%	77%

Final Report



EVALUATION OF THE STATE EMS PROGRAM

Prepared for the :

Department of Health for the State of Nebraska

June 6, 1994

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Table of Contents

Executive Summary 1

Methodology 2

I. Administrative Structure 3

Description of Current Situation 3

Findings 5

1. Few perceived advantages from functional separation of the divisions.
2. Separation of ALS/BLS functions uncommon among states.
3. Nebraska has fewer ALS services than comparable states.
4. Development of EMS Rules and Regulations in two divisions inconsistent.
5. Internal communications between DOH divisions less than effective.
6. Concerns exist regarding Bureau of Examining Boards Administration of ALS functions.
7. Perceptions regarding EMS Division mixed.
8. External legal services a significant barrier.
9. Volunteers supportive of innovative system improvements.
10. Rulemaking delays not experienced by other states.
11. EMS issues not clearly identified at the management level of the Health Department.

Recommendations 14

1. Restructure/Reorganize the EMS function.
   - Option One— Merge to single division.
   - Option Two— Functional organization structure.
   - Option Three— Segregate personnel and service regulation.
   - Option Four— Assign full programmatic control to single division/contract with other divisions.
2. Place EMS responsibility in high visibility/dynamic bureau.
3. Develop a single EMS council in Nebraska.
4. Develop five year plan.
5. Statutory and regulatory changes are needed.
6. Utilize NHTSA for benchmarking.

II. Tiered Response System 19

Description of Current Situation. 19

Findings 19

1. Typical hub and spoke relationships not evident in Nebraska.
2. Transfer of patients between different agencies and levels of care problemmatic.
3. Current structure exacerbates operational separation.
4. Health delivery changes necessitate EMS system transformation.
5. Training provided rather than coordinated.
6. Trauma systems development supports an integrated EMS system.

Recommendations 22

1. Develop a comprehensive state EMS plan.
2. Place high priority in EMS plan on rural health systems development.
3. Explore development of innovative response systems for rural communities.
4. Refocus the EMS division's training role.
5. Link DOH personnel performance to the achievement EMS plan goals.

III. Funding Issues and Methodology and Adequacy 25
Description of Current Situation 25
Findings 25
1. Nebraska EMS relies heavily upon block grant funds.
2. Perceptions exist in that there are more appropriate uses of block grant funding.
3. Alternative dedicated funding sources are commonly utilized for EMS.
4. Increased funding issues problemmatic but legislature generally supportive of EMS.
5. Fees charged are inconsistent from state to state.

Recommendations 28
1. Dedicated alternative funding options should be investigated.
2. Fees should not be a primary source of programmatic funding.
3. Provide permissive legislation for local/regional funding of ambulance districts.

IV. Programmatic Anchor in Health 29
Description of Current Situation 29
Findings 29
1. Among states, health department almost universally responsible for EMS.
2. EMS is not a high priority within the Nebraska Health Department.
3. There was no support to move the EMS function from Health.

Recommendations 31
1. Develop a comprehensive EMS Plan.
2. Increase the status of EMS within the department.

List of Figures

Figure 1—Percentage of Services Operating at ALS Level 6
Figure 2—Percent of State EMS Budgets from Federal Funding 25
Figure 3—EMS Agency Configuration 29

Executive Summary

This study involved conducting a review and the development of recommendations regarding Nebraska's EMS function along four specific dimensions. They included: The administrative structure; Improving the interagency coordination between clinical levels, which is referred to as a tiered response system; funding issues, methods and adequacy; and finally, whether the Department of Health is the correct state agency to support the emergency medical service function and how EMS could be more firmly anchored within the Department of Health.

The informational objectives were accomplished by gathering both quantitative and qualitative data. The methodology included state document review, direct observation, in-depth directive and non-directive interviews with representatives of EMS constituency groups, and interviews with key personnel and document reviews from other states. This research resulted in 25 key findings and 16 specific action-oriented recommendations.

The study found that certain department activities were highly rated while others rated extremely poorly. The department's fragmented administrative structure may be one of the underlying reasons that EMS, as a statewide *system*, has not developed as rapidly as in other states. Current practices related to interagency coordination between clinical levels must be changed. Nebraska had the lowest percentage of state funds in the program and the lowest percentage of its services certified to provide advanced life support services of comparable states. Viable funding methodologies exist and legislative support for well reasoned statewide EMS initiatives which also support local system development is likely.

Well developed, fully integrated statewide EMS systems have the ability to improve access to health care, significantly reduce human suffering, and reduce hospital stays and their related costs. Despite this, EMS has not been a priority within the Health Department. Administrative and legislative changes, coupled with a sound statewide plan for EMS, are necessary if the EMS system is to meet its full life-saving potential in Nebraska.

Methodology

Fitch & Associates utilized a three phased process to meet the needs of the Nebraska Department of Health. The three phases were scoping, data accumulation and detailed analysis, and final reporting.

In the scoping phase of the project Fitch & Associates met with Department Staff and the Internal Committee to accomplish several tasks. Chief among those tasks were the listing of known concerns about EMS oversight and the review of applicable internal documents, credentialing and administrative procedures, and EMS operations oversight functions. Agreement was also reached on a specific and detailed work plan.

Another important task in the scoping phase of the project included the identification of the appropriate individuals in adjacent states for inclusion in the study as well as relevant system participants and stakeholders to interview.

The second phase of the project was accumulation and analysis of the applicable data. This phase was substantively driven by the informational outcome and review criteria developed in the scoping phase. The analysis included both quantitative and qualitative data.

The analysis included a review of Department of Health funding, and quantification of available services and system participant and stakeholder perceptions of Health Department performance. Thirty-nine in-person and telephone interviews were held with Department staff and administration; advisory committee members; state legislators; professional education organizations; provider organizations; and, adjacent state oversight organizations. A review of Fitch & Associates' in-house national data base was also undertaken to provide supportive comparable data.

Based upon the analysis of the accumulated data and findings, recommendations were formulated to address the key objectives of the project.

I.
Administrative Structure

A. Description of Current situation.

The EMS functions of the Nebraska Department of Health are bifurcated between multiple divisions. Each division reports to a separate Bureau. Each Bureau reports to a different Deputy Director who in turn report to the Director of Health. The bureaus involved in EMS are the Bureau of Examining Boards and the Bureau of Health Promotion and Disease Prevention. The separation of responsibilities between bureaus has been based upon the levels of EMS certification for which they are responsible.

Bureau of Examining Boards—

The Bureau of Examining Boards, through its Division of Medical and Medical Support Professions, and its Division of Investigations and Enforcement is responsible for certification oversight and regulation of advanced life support services (ALS) skilled personnel.

Persons certified to the EMT-P (Paramedic) and EMT-I (Intermediate) level, given medical direction and field protocols, are allowed to provide advanced life support services to patients. Examples of specific skills which are practiced by an ALS certified person include defibrillation; airway management; initiation and maintenance of I.V.s; certain drug therapies; and, application of advanced immobilization and shock therapy devices.

The Bureau also certifies ALS services, and training entities. These certification functions are carried out by a staff which is responsible for a myriad of other certified service providers and medical personnel in the State. Other certification responsibilities of the Medical and Medical Support Division include physicians, pharmacists, and physician assistants.

A staff of three persons, each with other responsibilities, fill a total of 1.5 full time equivalent positions in the central office in Lincoln. Collectively, they are responsible for the regulatory function of advanced life support services in Nebraska.

With regard to the operation of Advanced Life Support organizations, the Bureau of Examining Boards is advised by, and receives input from, the Board of Advanced Emergency Medical Care; an advisory board established by statute. The AEMC Board is comprised of physicians and nurses. It is the largest advisory board in the state which does not have majority representation by those it regulates. That is, there is insignificant paramedic representation on the advisory board.

Bureau of Health Promotion and Disease Prevention—

The Bureau of Health Promotion and Disease Prevention, through the Division of Emergency Medical Services is responsible for oversight and regulation of basic life support services (BLS) skilled personnel. Those include first responders, emergency medical technicians-ambulance (EMT-A) and EMT-automatic defibrillation (EMT-AD).

Legislation was passed which allows for two additional levels of certification for basic life support personnel; EMT-Airway Management (EMT-AM) and, EMT-Intravenous Line (EMT-IV). Rules have been prepared but have not been approved by the Attorney General. In addition, clinical protocols as well as the procedures to interface the new skills with paramedic and EMT-I ALS skills have not been written.

The Division of EMS is staffed with central office personnel in Lincoln and seven regionally based coordinators. There are a total of 14 positions in the EMS Division.

B. Specific Findings.

EMS in Nebraska has been handicapped by its administrative structure. Each individual component has strengths, yet the effectiveness could be enhanced by making significant changes.

1. Few advantages are perceived from the functional separation of the two divisions.

The key constituent groups for EMS activities in Nebraska include those agencies and personnel regulated, consumers/end users, the staff of the department, and the legislature.

Thirty-four interviews were conducted with designated representatives of these groups. There was almost universal agreement that the current structure was less than effective and should be changed.

Anecdotal descriptions of making multiple phone calls to both divisions to obtain the answer to a simple question were common. Interviewees also commonly cited confusion associated with two sets of regulations and the difficulty of monitoring the certification of staff members involved in two distinctly different certification processes.

2. Separation of ALS/BLS functions is uncommon among states.

The 1993 Survey of State EMS functions, completed by the National Association of State EMS Directors, indicates three states in which the core EMS unit shares EMT licensing or certification responsibilities with another state entity. Six states indicted they shared responsibility for licensure or certification for paramedics.[1]

Each of the contiguous state EMS Directors interviewed by Fitch & Associates for this study indicated that separating the licensing function was less than desirable. None of these Directors interviewed recommended it as a preferred manner to handle the licensure/certification function.

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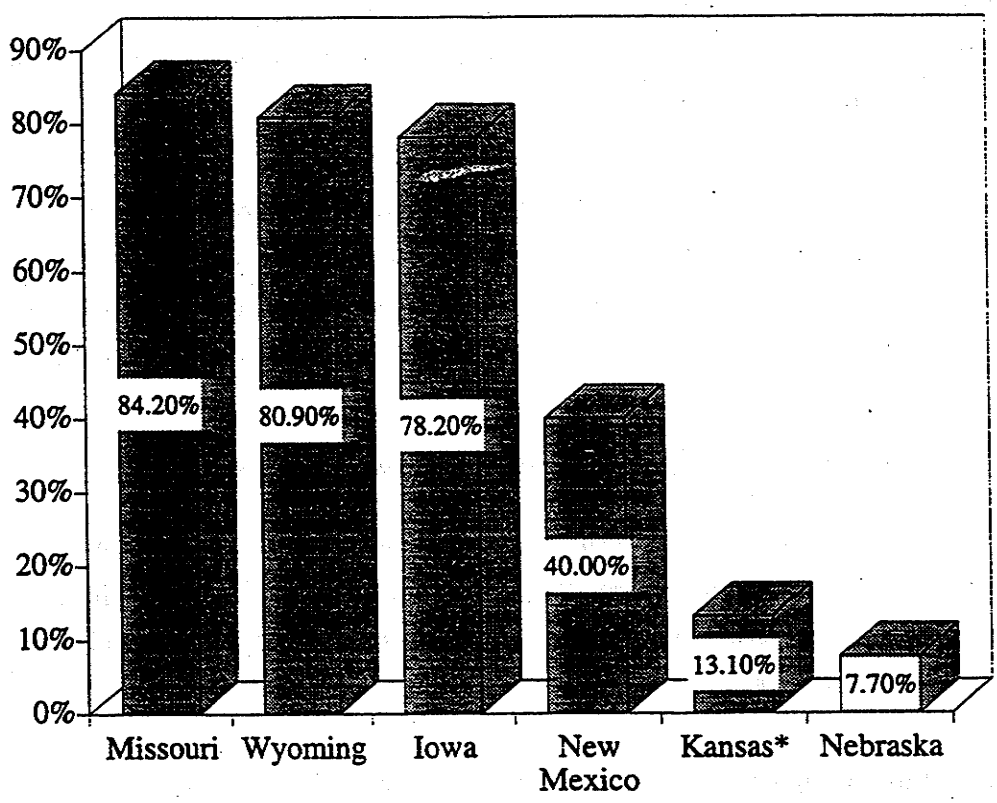
1 National Association of State EMS Directors. Data provided by Business Manager Tom Scott in correspondence March 7, 1994.

3. *Nebraska has fewer ALS services than comparable states.*

Interviews were conducted with the state EMS directors in five states in the region. They included, Iowa, Kansas Missouri, New Mexico, and Wyoming. In each of these states the percentage of ambulances which operate at the Advanced Life Support level (either intermediate or paramedic) range from a low of 7.7% in Nebraska to a high of 84% in Missouri. [2] This information is profiled at Figure 1 below.

Percentage of Services Operating at ALS Level



ALS = Intermediate and/or Full Paramedic
*Paramedic Only, No Intermediate Level

2 ALS Providers: Iowa 316, Missouri 192, Wyoming 68. New Mexico 34, Nebraska 28, Kansas 25.

Officials in Missouri attribute their high number of ALS services to several factors including permissive legislation which allows local taxing districts to support EMS service, and a detailed state EMS plan.

Iowa officials attributed their high number of ALS services to early and wide-spread involvement in the EMT defibrillation project on a state-wide basis. Through this program of intermediate intervention, communities experienced positive results and subsequently supported further system development at the local level.

4. *Development of EMS Rules and Regulations in two divisions are inconsistent.*

The consultants found that the development of rules and regulations in the two divisions follows different patterns. ALS rules promulgated through the Division of Medical and Medical Support Professions, are articulated clearly in terms of what actions are to be taken, by whom, and in what fashion. As an example, BOEB Policy II.6 deals with credentials processing. The responsibilities for administration, and process steps for reinstatement are precise and well defined. There is no ambiguity as to how to proceed. The steps are detailed down to how mail clerks and office clerks handle the requests for credentials processing.

However, BLS rules promulgated by the Division of EMS, are less precise. They allow for ambiguity and interpretation; which may be more effective if the goal is not necessarily form or process, but rather results and function. The ambiguity allows for interpretation of the rule or regulation based on the circumstances. For example Rule 006 Minimum Maintenance Standards, section 006.04 states "maintenance records must be maintained for ambulance and defibrillators", and rule 006.06 only calls for "calibration of defibrillators on an annual basis." Certainly these less than stringent policies, with minimal detail requirements will allow almost any organization to adhere.

5. *Internal communications between DOH divisions is less than effective.*

Interviews with division officials and constituents revealed that communications between divisions need improvement.

Over 90% of those interviewed voiced frustration regarding the difficulties faced by having to work with, and meet the requirements of two oversight bodies. The confusing nature of not knowing with whom they are to communicate regarding various certification, service, and continuing education issues was the most frequently named dissatisfier.

An alarming issue raised on an anecdotal basis was the differing mechanisms for handling personnel and service investigations that crossed the lines of responsibility between the two divisions. Multiple incidents were related by those inside and outside the department. They included incidents in which information and records were not shared between investigators and investigations which were significantly impaired due to the lack of access. Personality and working relationships, rather than department policy, were given as the controlling factors on the level of cooperation. Investigators for both divisions indicated that they do share information and cooperate when and where necessary.

The consultants observed that Nebraska is represented by only one of the division directors at the National Association of State EMS Directors. Based upon information gleaned from the interviews, the Division of Medical and Medical Support Professions, staff is not aware of some of the important and dynamic national policy level issues that are discussed in this forum. This may be attributable to budgetary limitations which have prevented the staff from traveling and participating.

Examples of the divisions' communications barriers on routine matters were also experienced by the consulting staff during the project. For example, data collection dates, which had previously been cleared by both divisions were changed because one division previously scheduled an advisory board meeting on the same day. Another example involved the week-long illness of one of the Bureau directors which had been scheduled for an interview with the consultant. Despite both divisions directors awareness of the schedule, no one communicated that the bureau director had been ill and would be unavailable. While neither incident was significant, they illustrate the difficult communications issues.

6. *Concerns exist regarding the Bureau of Examining Board's Administration of the ALS function.*

ALS services and certificate holders expect that their designated oversight agency be a full function (programmatic) agency capable of providing leadership, direction and support. Instead, the agency sees itself (almost solely) as a certification agency. This has lead to missed expectations and negative perceptions.

Among the physicians and ALS providers interviewed, there was general consensus that the BOEB was difficult to work with. It was described as hard to obtain straight answers and usually very slow in returning calls or getting back to providers with answers. Nearly unanimously, those interviewed were of the opinion that BOEB staff with whom they usually communicate on a daily basis were unable to make decisions regarding ALS issues.

Specific issues related to the Bureau of Examining Boards included :

Investigations—

Elongated time frames necessary to complete an investigation and resulting certification actions were a common concern. Some personnel certification reviews/actions were reported to take over 12 months to process.

The process was generally described as follows:

1. Complaint received.
2. Refereed to Division of Investigation and Enforcement.
3. DI/E screening committee decides if complaint merits investigation.
4. Discussed with member of the AEMC Board.
5. Referred to one of five investigators.
6. Presented to AEMC Board in closed session.
7. Formal action may be taken in one of the following manners:
    a) Petition Attorney General for a revocation hearing,
    b) Temporary suspension of up to 30 days,
    c) Assurance of compliance agreement (not a disciplinary action),
    d) Written letter of concern,
    e) Take no action.

The number of EMS personnel are small compared to the those represented by the 23 other professions under the jurisdiction of the division. Staff indicated that unless a blatant and immediate threat to patient health and welfare is detected, EMS investigations are a relatively low priority since five investigators are responsible for all 24 professions under the agency's jurisdiction.

Lack of leadership, direction, and support—

During interviews with Fitch & Associates, providers, service representatives, and physicians routinely interacting with the BOEB expressed frustration at the lack of direction, and leadership provided by staff. Key staff within the BOEB indicated that the EMS function represented approximately 20-25 percent of their responsibility and time commitment.

Physician medical directors interviewed expressed concern that little support was provided for the continuing education for medical directors of ALS services. Others indicated that the agency should be taking a lead role in developing consensus regarding statewide protocols or guidelines for medical control.

Oversight of ALS training entities inadequate—

Staff indicate that ALS training institutions entities are certified but that no follow-up verification or observation of the sites and activities are conducted, although they are planned in the coming year. Commonly, states which authorize training entities provide active supervision including independent verification of instructor qualifications, curriculum, faculty/student ratios, and equipment availability.

In states with active supervision, state staff members audit classes and test on an unscheduled basis. Typically when on-site, state EMS training staff members offer technical assistance and provide other support rather than solely performing regulatory/inspection function.

7. Perceptions regarding EMS Division were mixed.

The availability of training, provided directly or facilitated by the EMS division, was the single most positive aspect noted by all interviewees. Other positive comments included the regional staff of EMS coordinators, automatic defibrillators, the critical incident stress debriefing program (CISD) and movement toward modular (intermediate) skill development for EMTs. The division's responsiveness and willingness to listen to

different perspectives and viewpoints was also a routinely named positive aspect of the division.

Concerns with the EMS division were also outlined by interviewees. The most frequent concerns included:

Dissatisfaction over timeliness of regulations—

Second to the fragmentation of ALS and BLS functions, this issue was the second most often cited dissatisfier among those non-departmental individuals interviewed.

There was extreme dissatisfaction among legislators and providers that regulations are not processed in a timely fashion. Several legislators observed that despite specific language requiring development of regulations within a defined time period, the division has been unable to implement regulations in that fashion.

Reportedly, rules are typically developed in a timely fashion, approved by the Board of Ambulance Advisors and the Board of Health, but are not processed by the Attorney General's office in a reasonable time frame.

Internal staff issues and personality issues—

Individuals inside and outside the DOH noted concerns about the divisions failure to effectively deal with internal staff strife and/or remove those personnel who were either unwilling or unable to perform the duties now required. One provider observed: "positions and responsibilities have grown but several of the mid-level personnel have not."

Others interviewed internally described personality and management style of key staff as issue of concern. These individuals were unable to relate those concerns to specific behaviors instead describing the issue as "ruffling feathers in a bureaucratic structure."

Investigation capabilities—

Some health department representatives expressed concern about the existing capabilities of the EMS division's personnel to conduct investigations.

Funding, vision and lack of direction—

Despite the generally acknowledged positive feelings for the division, there was concern expressed that the division has not created adequate support for its mission at the upper levels of the department. This has resulted in a perceived failure to secure additional funding and management resources necessary to advance rather than simply maintain the program.

8. External legal services a significant barrier.

The staff of both divisions described frustration with obtaining timely legal support. While DOH attorneys have been involved, external review and interactions with the Attorney General's office are described as a barrier. Other states have dedicated legal staff assigned within EMS to advise on certification, hearings, inspection and licensure matters. They also facilitate external legal relationships, when required. Staff indicated that recent procedural changes within the Attorney General's office could positively impact their responsiveness.

9. Volunteers are generally supportive of innovative system improvements.

Volunteers are reported to have been historically vocal in opposing increased standards and the evolving standards of care. Most of these issues related to training time and the requirement to leave their home communities to obtain continuing education. Volunteers interviewed, and legislators, were aware and supportive of the need to increase EMS standards to keep pace with increased medical standards.

Based upon interviews with the other state EMS directors, regional staff providing hands-on technical assistance is a key to volunteer acceptance and support of the statewide EMS program. The perceived resistance to system enhancements experienced in Nebraska are uncommon in other states. In fact, according to Wyoming's EMS Director, the volunteers, as a group, encouraged the state office to increase the continuing education requirements.

10. Rulemaking delays not experienced by other states.

The delays in promulgating administrative rules and regulations in Nebraska were not common among the five comparable states in the study. The average elapsed time between statutory changes and the effective date of regulations in the comparable states was six months.

11. EMS issues not clearly identified at the management levels of the Health Department.

Neither Bureau Director was able to articulate national EMS issues which may impact EMS. Neither had participated in outside conferences, nor were they able to describe specific input, process, or output measures commonly utilized for EMS program evaluation.

C. Recommendations Regarding Administrative Structure.

1. Restructure / Reorganize the EMS function.

Responsibility for programmatic functions for the full spectrum of EMS activities needs to be optimized within the department. There are multiple options to implement this recommendation. They include:

- Merge all functions currently performed by the three divisions to one EMS division.
- Functional specialization for training, technical assistance, personnel licensure and service licensure/inspections within different divisions of the DOH.
- Segregate functions along personnel and service regulation dimensions.
- Provide full programmatic control to a single division with the ability and encouragement to internally contract functions to other divisions.

A discussion of the advantages and disadvantages of the four options follows.

Option One—

With this option all functions currently performed by the three divisions (Medical & Medical Support, Investigations & Enforcement, and EMS) located in two bureaus would be performed by a single division. From a programmatic perspective there are several distinct advantages to this approach. They include:

- Supports development of a comprehensive EMS plan.
- Centralizes both control and accountability.
- Flexibility in assigning internal staff (redundancy) to increase efficiency.
- Single source for constituent interactions on EMS.

There are several disadvantages to this approach which should also be considered. They include:

- EMS may have an increasingly independent status within the department.
- Does not take full advantage of department expertise and data processing systems.
- May require duplicitous systems.

Of the states selected by the Department of Health for comparison in this study, all use this structural model. By far, this model is most common throughout the United States.[3]

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3 National Association of State EMS Directors. Data provided by Business Manager Tom Scott in correspondence March 7, 1994.

Option Two—

With this approach the department of health would be reorganized along functional lines. This would provide for functional rather than programmatic specialization. For example, all training oversight for all health professions would be handled by one group. Technical assistance, personnel licensure and service licensure/inspections would be accomplished by different divisions within DOH. Advantages of this approach include:

- Potential opportunities to achieve efficiencies.
- Takes full advantage of the existing functional expertise in department.
- Could reduce number of full-time positions throughout department.
- Easier to manage and adjust department wide priorities and resources.

There are several distinct disadvantages of this option from the EMS program's perspective. They include:

- Departments organized by function inherently find it more difficult to focus those functional elements on any one program. Therefore, the development and implementation of a statewide EMS plan could be more difficult.
- Functional approaches can result in low levels of performance and accountability.
- Departmentally, the EMS role may be reduced.
- This approach is more susceptible to multiple priority changes within the department.
- Single function staff may not yield the economies of scale desired.

Option Three—

With this approach, the EMS functions would be segregated along personnel and service regulation dimensions. In other words, the licensure function for both ALS and BLS personnel would be handled by BOEB, while all other regulatory and support functions would be handled by another division. The advantages include:

- Separating functions along personnel and service dimensions is more logical than separation based upon level of care.
- Takes advantage of the existing expertise in BOEB.

Disadvantages of this approach include:

- Investigatory gray area between what is "service" and "personnel" related. (e.g. training standards and entities)
- Typically these functions are intertwined in EMS plan development and implementation.
- Crossover of multiple divisions making trips throughout state may limit economies.

Option Four—

In this approach, the department provides full programmatic control to a single division. This option also provides the division the ability, and encouragement to internally contract appropriate support functions to other divisions within DOH or other departments. There are several unique advantages of this approach. They include:

- Utilizes the strongest advantages of other options.
- Provides coordinated planning and clear accountability.
- Takes advantage of functional expertise and economies of scale.
- Single source for constituent interactions on EMS.

There are several disadvantages which should be evaluated when considering this approach. The include:

- Requires sophisticated, performance based, internal contracting agreements which run counter to typical state government cultural norms.
- Dependent upon enhanced communications.
- May require duplicating services if contracted entities do not perform well.

The consultant recommendation is that the State of Nebraska implement option four. Coordinated planning and clear accountability coupled with flexibility to take advantage of interdepartmental expertise and systems offers the best potential for improvement.

2. *Place the responsibility for EMS in a high visibility and dynamic bureau.*

EMS will become an increasingly important delivery component over time. This is particularly true for the most rural and frontier areas of the state. As community hospitals close, EMS becomes the only emergency service available. As the healthcare system becomes more integrated and patients move between community/regional centers and tertiary care centers with greater frequency, enhanced medical transportation capabilities are necessary.

Interesting developments are occurring in other parts of the nation in which alternative prevention and delivery approaches are taking full advantage of the EMS resource. Pilot programs are underway in New Mexico, Alaska and Florida. Nebraska, due to its fragmented structure/leadership is not currently well positioned to take complete advantage of federal funding opportunities for this aspect of EMS.

Strong leadership is central to the evolution of a coordinated, well developed EMS program in Nebraska. In many states EMS is thought of as a "problem" division by many career public health officials. Typically, EMS officials are action oriented which reflect the emergency nature of the services provided by entities the state agency serves and regulates.

During the upcoming discussions about realignment of responsibilities within the department, consideration should be given to placement of the consolidated EMS function in a bureau in which EMS will have a high priority.

3. *Develop a single EMS council in Nebraska.*

A single EMS council with broad representation should be developed to advise the Department of Health on matters related to EMS (including trauma) in the State of Nebraska. A key to developing an integrated system of care and decreasing administrative redundancy is a reduction in the number of separate boards.

Concerns about adequacy of input may be addressed through sub-committees and task force groups used to provide specialized expertise or accomplish specific responsibilities. Specific concerns about adequacy of input from paramedic personnel or other groups could be overcome by allocating a designated number of members to be appointed from each constituency group. State EMS directors contacted by Fitch & Associates agreed that broad based input would not be compromised using a single board, and may be enhanced by the more functional structure.

Until the legislature approves such a change, the leadership of both boards should meet on a regular basis with the division heads and bureau chiefs. When and where possible, joint meetings of the boards themselves should be initiated.

4. *Develop five year plan with broad based constituent input.*

A clear, functional five year plan for the development of a coordinated EMS system is required. Multiple sub-systems and components must be addressed by such a plan.

The state EMS plan provides direction to the staff. It helps focus legislative efforts by outlining the importance of goals, objectives and action steps being undertaken. This can provide an objective measure for accountability. It also serves as a guide and powerful learning tool for constituent agencies. Bi-annual updates of the state EMS plan are recommended.

5. *Statutory and regulatory changes to simplify processes are needed.*

Many of the changes recommended will require statutory, regulatory and administrative changes to implement. A single set of legislative authorities and regulations should be proposed in the next session. Careful attention should be given to develop adequate support throughout the state prior to introduction to ensure its passage.

6. *Utilize NHTSA Evaluations for benchmarking EMS program.*

The National Highway Traffic Safety Administration offers an evaluation service for state EMS programs. This may be a future requirement for federal funding. The NHTSA review should be routinely utilized to provide peer input to the EMS Director and independent feedback to the Health Department Director on the progress being made toward a coordinated system.

II.
Tiered Response System

A. Description of the Current Situation.

Tiered response, as defined in Nebraska, means the smooth transfer of EMS patients from one level of out-of-hospital care to another. The current response system has 363 BLS services, of which 130 are defibrillator qualified, and 28 intermediate or full paramedic services.

Recommendations were desired about the feasibility of implementing a "tiered response system" in Nebraska.

B. Specific Findings.

1. Typical hub and spoke service relationships are not evident in Nebraska.

In other areas of the country, ambulance service transport relationships often mirror hospital referral patterns. That is, tertiary care centers have been actively involved in EMS education, support of ALS program development or the direct provision of ALS services. In this way, they have positioned themselves as a resource to BLS units in outlying areas. Strong regional relationships have evolved naturally. This does not appear to be the case in Nebraska.

2. Seamless transfer of patients between different agencies and levels of care not evident.

During the consultation, staff, board members and providers related widespread anecdotal incidents in which BLS services did not utilize higher levels of care despite its availability. For example, a BLS unit transporting a critical patient from their area to a hospital in an area with ALS service keeps "their patient," instead of requesting assistance, or an "intercept," denying the patient access to the more appropriate (higher) level of care.

Providers and physicians interviewed described on-scene altercations between service personnel about who (which level provider) was responsible for a particular patient at an incident.

Interviews with other state directors indicated that this situation is extremely uncommon in their respective states and is not tolerated. Several indicated that if confronted with such a blatant disregard for the patient's welfare, that they would sanction both the individuals and services involved under their regulatory authority.

3. *Current administrative and regulatory structure exacerbates operational separation and stifles system development.*

The separation of authority between ALS and BLS functions, has been taken to extremes in Nebraska and does not serve patients well. The department's ability to influence even the simplest of issues related to cooperation between different services is dependent upon the interpretation of multiple sets of regulations, by divisions with clearly different policy driven agendas and the personalities of the staffs within those divisions.

Central factors responsible for the slow development of a statewide EMS "system" in Nebraska include: the current administrative structure; the perceived and actual turf issues that have grown both inside and outside the DOH; and, the lack of accountability. While the statutory and administrative approach utilized may have been a political accommodation that made sense at the time of its implementation, it no longer serves the state.

EMS throughout America has grown and evolved over time. Based on the availability of advanced life support service and the "tiering issues" it is reasonable to conclude that EMS in Nebraska has not. It is nearly impossible to develop a cohesive statewide EMS plan within the current administrative and regulatory structure.

4. *Impact of more integrated health systems necessitates EMS system transformation.*

Fundamental changes are occurring in healthcare. Both the unbundling of healthcare services in the 1980s and the integration of the healthcare systems in the 1990s have increased the demand for EMS and medical transportation. This is expected to

continue. Distance, time and medical service availability issues make the increased demand particularly troublesome for rural areas.

Meeting the future demand for EMS/medical transportation service with a statewide EMS system design which was acceptable in the 1970s is problematic. The accelerated changes in healthcare require the State of Nebraska to act rapidly to improve its statewide approach for EMS.

5. *Training is provided rather than being coordinated.*

Within the EMS Division training is often provided directly by Division staff rather than the Division staff coordinating and facilitating the training provided. In essence, the division is largely a provider of service rather than managing the process by which training occurs. While it has met many BLS services' needs and endeared the Division to its constituents, this approach has not fully empowered others to assume the roles which support evolving system development.

6. *Trauma systems development will support a more integrated EMS system.*

The Nebraska Legislature is currently considering a Trauma Systems Development Act (LB 1263). Typically, comprehensive trauma system legislation is a part of a comprehensive EMS plan and system. While this bill will encourage development of trauma systems, it may further fragment the DOH's EMS policy if not fully integrated with existing components. For example, the NARSIS system could provide a solid base for the proposed trauma registry instead of developing a duplicitous non-integrated reporting system such as contemplated by the proposed legislation.

Often, trauma systems utilize regional designated centers with specified capabilities. In some states, part of the consideration for state designation of regional trauma centers includes support of EMS training and system development activities in the region. This approach to develop regional cohesiveness within the EMS program may merit consideration.

C. Recommendations Related to Tiered System.

1. Develop a comprehensive state EMS plan.

A comprehensive, well reasoned state EMS plan provides many advantages for the state as outlined at recommendation I.C.4. in a previous section of this report

2. Place high priority in EMS plan on rural health systems development.

Rural system development should have a high priority within the state EMS plan. It is commonly recognized that it is more difficult to provide ambulance coverage and appropriate response times, recruit personnel, maintain skills and achieve self funding for operations, in rural areas.

Other states are moving to support rural EMS activities. For example, New Mexico has included paramedics in its Health Services Corp Act which offers stipends and loan forgiveness for personnel seeking paramedic training who are willing to serve rural areas.

The emphasis on rural issues at the federal level may offer several unique funding opportunities for Nebraska in the coming years. Other large demonstration grants for rural EMS projects have been granted in the past 15-24 months. Nebraska's ability to successfully compete for these outside resources is predicated on a well developed plan and demonstrating how the proposed project may improve the health status of affected individuals.

3. Explore development of innovative response systems for rural communities.

Alternative system designs incorporating volunteer Quick Response Teams (QRT) as first responders, supported by regionally based ALS ground and air transportation are becoming increasingly common in rural areas. This option can be effectively used as a bridge mechanism in those communities which find it impossible to meet the evolving medical standards required for ALS and BLS transport capabilities.

With this approach, for example, when an emergency occurs in a rural community the local QRT and the region's helicopter both respond. In those rare

situations in which the helicopter is unavailable due to another assignment, maintenance or weather, the regional ALS ground transport system would be utilized to effect the transport. Patient movement between facilities would also be accomplished by the ground ALS system as a mechanism to enhance the financial viability of the total system. Interfacility transport would also be supported/accomplished by fixed wing aircraft as appropriate.

Other innovative options include utilization of EMS personnel to support improved health prevention and primary care screening in rural areas, the integration of regionally based helicopter service as part of the trauma system and creating permissive legislative authority to facilitate development of regional ALS transport programs. Each of these options merit comprehensive operational and financial feasibility studies. That level of investigation was beyond the scope of this project.

4. Refocus the EMS division's role relative to training.

Reduce the number of training sessions provided directly by EMS Division staff without reducing the number of currently available training sessions. Use the EMS Divisions' personnel and resources to develop and support expanded education programs sponsored by regional hospitals and community colleges.

In other states, regional hospitals have been extremely receptive to implementing strategies to solidify relationships within their catchment areas. This has included complete funding of training and regional medical control functions.

Emerging technology is making decentralized training opportunities more cost-effective. Examples include the "Medical Update" video series currently utilized by the EMS division, the "EMSAT" satellite system, and the "LESSon" system computer-based training software.

5. Link DOH personnel performance to the achievement of EMS plan goals.

Development of a comprehensive EMS plan and its successful implementation should be a major performance factor for department employees. Some state employees may believe that basing performance on achieving goals which are largely implemented at the local level is not reasonable. Other states have found it to be an effective tool. The

Missouri EMS Director partially attributes the large percentage of services which have attained ALS status to setting defined targets in the plan and then holding state personnel accountable for facilitating system development at the local level.

III.
Funding Issues and Methodology

A. Description of Current Situation.

Current funding for the Nebraska EMS function approximates $1 million per year. EMS division general funding is approximately $515,000 coupled with $500,000 in preventive health block grant funds, including $50,000 earmarked for the NARSIS system. The Medical and Medical Support Division general funding approximates $60,000 per year. There is no preventive block grant funds allocated to this division.

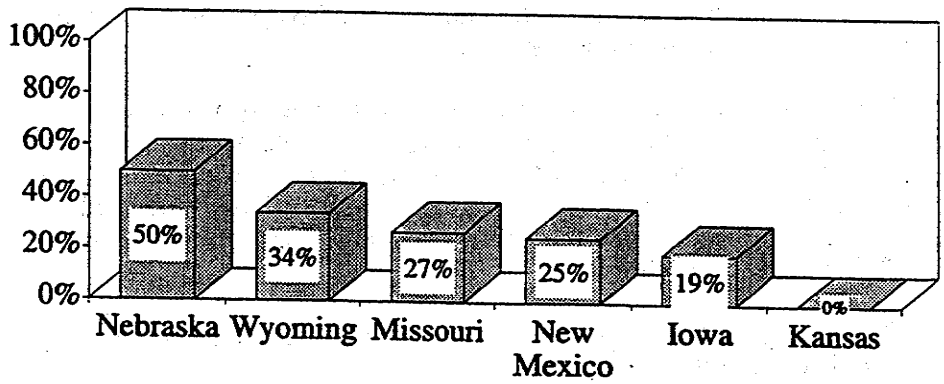
The study seeks recommendations to modify funding of EMS in Nebraska at both the state and local level.

B. Specific Findings

1. Nebraska relies more heavily upon block grant funds than do other states.

Based upon the financial information provided by the directors of the five comparable states, Nebraska uses federal funding sources at a significantly higher rate than do others.[4] The exact percentages are profiled at Figure 2.

Percent of State EMS Budget From Federal Funding



4 Block Grand Funding for EMS: Nebraska $450,000; Wyoming $120,000; Missouri $250,000; New Mexico $850,000; Iowa $250,000; and, Kansas $0.

2. *Perceptions exist within DOH that there are more appropriate uses of block grant funding.*

Interviews with DOH staff revealed that there is increasing programmatic demand in other areas for the preventive health block grant funds. Changing federal and state health department priorities may reduce the availability of these funds in the future. Each year, the EMS function is at risk as the percentage designated from grant funds must be internally negotiated.

3. *Alternative dedicated funding sources are commonly utilized for EMS.*

More than one-quarter of the states in the country utilize some form of permanent, or specifically dedicated, source of funding for their state's EMS programs. Common programs include a surcharge on moving violations, driver' license and motor vehicle registrations surcharges, court docket fee surcharges, and "sin" taxes. Of these, the majority provide some form of funding for local jurisdictions in the form of matching or direct grants to fund local projects consistent with the state EMS plan for system development. These programs vary widely.

New Mexico's recently enacted EMS Fund Act offers an example of how such funding is allocated. This Act provides a recurring appropriation for EMS to be designated as follows:

- Seventy-five percent allocated to a local EMS system funding program for distribution to counties and municipalities. The distribution is based upon an objective formula calculated from the population size of each county and the relative number of runs. Funds are restricted to non-salary uses.

- Twenty-two percent allocated to EMS system improvement projects. Those projects include: cooperative system enhancement projects to be shared by multiple services (e.g. regional radio and dispatch systems); a matching program for EMS vehicles; statewide project system; and, other statewide EMS system enhancement projects.

- Three percent allocated to the EMS bureau for administrative; technical assistance; and, monitoring costs.

This funding is in addition to the general funds annually appropriated to the Department of Health for the EMS Bureau.

4. *Increased funding issues are problematic but the legislature is generally supportive of EMS.*

Increasing taxes in the current economic environment is difficult in many states, and reportedly more so in Nebraska. The state is recognized as fiscally conservative and one which jealously guards local autonomy. Not withstanding those factors, the legislators interviewed indicated they believed their colleagues would be inclined to act favorably on EMS funding issues as part of a comprehensive EMS plan.

Each legislator indicated that a methodology which involves local distribution of funds would be advantageous to ensuring funding.

5. *Fees charged are inconsistent from state to state.*

Great inconsistencies were noted in the fees charged EMS personnel and services. Among the states interviewed, the range of professional certification fees charged was $0 to a maximum of $35. Those states charging a certification fee indicated that the fees were originally designed to cover state processing costs but some now consider it more of a nuisance than a major revenue source.

Establishing fees for EMS certifications Nebraska has been politically sensitive in the past. A great percentage of Nebraska's certified personnel are volunteers receiving no compensation, paid only a token stipend or expense reimbursement, or receive a modest salary.

C. Recommendations Related to Funding EMS in Nebraska.

1. Dedicated alternative funding options should be investigated.

The state must develop a dedicated, recurring, funding method to ensure the availability of funds for long-term EMS system enhancement. Any such plan should recognize local funding needs and share resources, as necessary, to gain local cooperation in achieving the EMS plan goals. For example, a surcharge of $5.00 on motor vehicle registrations would yield approximately $6,656,665. annually.[5]

2. Service and Certification Fees should not be a primary source of programmatic funding.

Service and certification fees should *not* be considered a viable source of revenue to support the EMS function in Nebraska. If the state should elect to require certification fees, then those fees should be designed to cover reasonable cost of processing the applications and not as a revenue source for other EMS functions.

3. Provide permissive legislation for local/regional funding of ambulance districts.

In addition to other funding alternatives recommended, the state should develop legislative rationale enabling multi-jurisdictional entities to form and fund ambulance districts. Many local jurisdictions are reported to be at their state authorized tax caps and action by the legislature is required.

This recommended legislation would allow jurisdictions to exceed that cap by an established figure for the express purpose of funding local EMS programs. This provides an opportunity for local jurisdictions to join together in developing EMS programs. Local autonomy is preserved as local units of government, and their constituents, would be required to approve the actual local tax initiative.

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5 Based upon an estimate of 1,331,331 vehicles provided in the 1993 vehicle registration summary - Titles & Registration Section, Nebraska Department of Motor Vehicles.

IV.
Anchor in Health

A. Description of Current Situation.

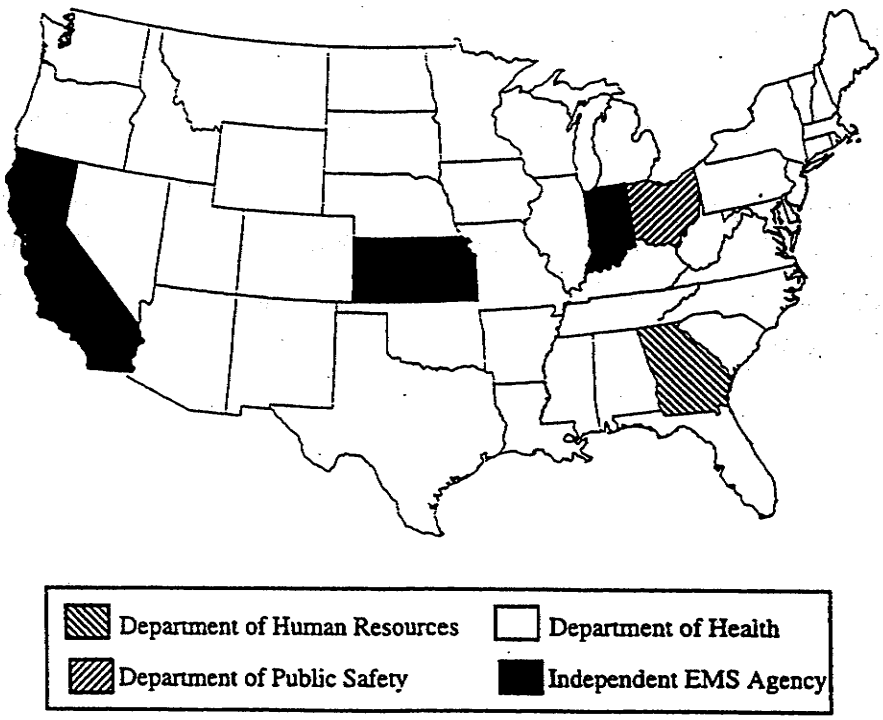
The EMS function currently is considered a healthcare program. The study seeks to determine mechanisms to ensure that it remains firmly anchored as a health program.

B. Specific Findings.

1. Among all states, the health department is almost universally the state agency responsible for EMS.

A review of the agencies in which the EMS function is located revealed only two states in which it was not administratively a component of the state health department. In one of those states it is part of the department of public safety. In the other it is a unit of the department of human resources. In three states the EMS function has independent agency status. A summary of agency configurations is presented at Figure 3.

State Agency Responsible For Emergency Medical Services



2. *EMS is not a high priority within the Nebraska Health Department.*

Perceived importance of the EMS function is commonly evidenced by its integration into department wide plans/goals and its relative placement in the organizational structure within the department.

The future agenda for the department was outlined in the second edition of the document "Nebraska Year 2000 Health Goals and Objectives" published in 1992. Critical issues related to the health of Nebraskans and specific recommendations were outlined in key sections of this document including:

- Cardiovascular Diseases,
- Unintentional Deaths,
- Motor Vehicle Fatalities, and
- Access to Healthcare

No reference to EMS/medical transportation could be found in the department's goals and objectives document. The importance of EMS in addressing each of these areas has been well documented at the federal level and by other states.

A review of the organizational structures of a number of other states' health departments was undertaken. Based upon the placement of the EMS function within those structures, it is reasonable to conclude that EMS has relatively low organizational status within the Nebraska Health Department.

3. *There was no support to move the EMS function from Health.*

The health department is clearly seen as the appropriate state agency to be responsible for the EMS function. Among all those interviewed during the project, there was not a single individual who expressed a desire, or thought it advisable, to locate EMS in another department.

C. Recommendations for providing a strong anchor for EMS in the Health Department.

1. Develop a comprehensive EMS Plan.

Throughout this project common themes of reducing fragmentation and the need for statewide planning were apparent. Many of the issues raised could have been obviated had a cohesive plan been prepared and used as a rallying point for both providers and legislators.

2. Increase the status of EMS within the department.

EMS is a critical factor impacting the mortality and morbidity of Nebraskans. The EMS system's function in supporting health goals should become an integral part of the department's goals for improving health status within the state.

The Director of EMS must have direct access, and a clear line of reporting, to the Director of the Department of Health. EMS is a dynamic healthcare service and EMS leadership at the state level requires the flexibility and capability to make changes and adopt protocols without the interference of duplicate levels of government bureaucracy.

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Designation: F 1149 - 93

Standard Practice for Qualifications, Responsibilities, and Authority of Individuals and Institutions Providing Medical Direction of Emergency Medical Services[1]

This standard is issued under the fixed designation F 1149; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the qualifications, responsibilities, and authority of individuals and institutions providing medical direction of emergency medical services.

1.2 This practice addresses the qualifications, authority, and responsibility of a Medical Director (off-line) and the relationship of the EMS (Emergency Medical Services) provider to this individual.

1.3 This practice also addresses components of on-line medical direction (direct medical control) including the qualifications and responsibilities of on-line medical physicians and the relationship of the prehospital provider to on-line medical direction.

1.4 This practice addresses the relationship of the on-line medical physician to the off-line Medical Director.

1.5 The authority for control of medical services at the scene of a medical emergency is addressed in this practice.

1.6 The requirements for a Communication Resource are also addressed within this practice.

2. Referenced Documents

2.1 *ASTM Standards:*

F 1031 Practice for Training the Emergency Medical Technician (Basic)[2]

F 1086 Guide for Structures and Responsibilities of Emergency Medical Services Systems Organizations[2]

3. Terminology

3.1 *Description of Terms Specific to This Practice*

3.1.1 *communication resource*—an entity responsible for implementation of direct medical control. (Also known as medical control resource.)

3.1.2 *delegated practice*—only physicians are licensed to practice medicine; prehospital providers must act only under the medical direction of a physician.

3.1.3 *direct medical control*—when a physician or authorized communication resource personnel, under the direction of a physician, provides immediate medical direction to prehospital providers in remote locations. (Also known as on-line medical direction.)

3.1.4 *emergency medical services system (EMSS)*—all components needed to provide comprehensive prehospital and hospital emergency care including, but not limited to; Medical Director, transport vehicles, trained personnel, access and dispatch, communications, and receiving medical facilities.

3.1.5 *intervener physicians*—a licensed M.D. or D.O., having not previously established a doctor/patient relationship with the emergency patient and willing to accept responsibility for a medical emergency scene, and can provide proof of a current Medical License.

3.1.6 *medical direction*—when a physician is identified to develop, implement, and evaluate all medical aspects of an EMS system. (*syn.* medical accountability.)

3.1.7 *medical director off-line*—a physician responsible for all aspects of an EMS system dealing with provision of medical care. (Also known as System Medical Director.)

3.1.8 *on-line medical physician*—a physician immediately available, when medically appropriate, for communication of medical direction to non-physician prehospital providers in remote locations.

3.1.9 *prehospital provider*—all personnel providing emergency medical care in a location remote from facilities capable of providing definitive medical care.

3.1.10 *protocols*—standards for EMS practice in a variety of situations within the EMS system.

3.1.11 *standing orders*—strictly defined written orders for actions, techniques, or drug administration when communication has not been established with an on-line physician.

4. Significance and Use

4.1 Implementation of this practice will ensure that the EMS system has the authority, commensurate with the responsibility, to ensure adequate medical direction of all prehospital providers, as well as personnel and facilities that meet minimum criteria to implement medical direction of prehospital services.

4.1.1 The state will develop, recommend, and encourage use of a plan that would assure the standards outlined in this document can be implemented as appropriate at the local, regional, or state level (see Guide F 1086).

4.1.2 This practice is intended to describe and define responsibility for medical directions during transfers. It is not intended to determine the medical or legal, or both, appropriateness of transfers under the Consolidated Omnibus Budget Reconciliation Act and other similar federal and/or state laws.

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[1] This practice is under the jurisdiction of ASTM Committee F-30 on Emergency Medical Services and is the direct responsibility of Subcommittee F30.03 on Organization/Management.

Current edition approved August 15, 1993. Published October 1993. Originally published as F 1149 - 88. Last previous edition F 1149 - 88.

[2] *Annual Book of ASTM Standards*, Vol 13.01.

5. Medical Director

5.1 *Position*—System Medical Director (Off-line Medical Director).

5.1.1 Each EMS system shall have an identifiable Medical Director who, after consultation with others involved and interested in the system, is responsible for the development, implementation, and evaluation of standards for provision of medical care within the system.

5.1.1.1 All prehospital providers (including EMT (Emergency Medical Technician) basics) shall be medically accountable for their actions and are responsible to the Medical Director of the EMS agency (local, regional, or state) that approves their continued participation.

5.1.1.2 All prehospital providers, with levels of certification above EMT basic, shall be responsible to an identifiable physician who directs their medical care activity.

5.1.2 The Medical Director shall be appointed by, and accountable to, the appropriate EMS agency in accordance with Guide F 1086.

5.2 *Requirements of a Medical Director:*

5.2.1 The medical aspects (see 5.3) of an emergency medical service system shall be managed by physicians who meet the following requirements:

5.2.1.1 Licensed physician, M.D. or D.O.

5.2.1.2 Experience in, and current knowledge of, emergency care of patients who are acutely ill or traumatized.

5.2.1.3 Knowledge of, and access to, local mass casualty plans.

5.2.1.4 Familiarity with Communication Resource operations where applicable, including communication with, and direction of, prehospital emergency units.

5.2.1.5 Active involvement in the training of prehospital personnel.

5.2.1.6 Active involvement in the medical audit, review, and critique of medical care provided by prehospital personnel.

5.2.1.7 Knowledge of the administrative and legislative process affecting the local, regional, and/or state prehospital EMS system.

5.2.1.8 Knowledge of laws and regulations affecting local, regional, and state EMS.

5.3 *Authority of a Medical Director Includes but is not Limited to:*

5.3.1 Establishing system-wide medical protocols (including standing orders) in consultation with appropriate specialists.

5.3.2 Recommending certification or decertification of non-physician prehospital personnel to the appropriate certifying agencies.

5.3.2.1 Every system shall have an appropriate review and appeals mechanism, when decertification is recommended, to assure due process in accordance with law and established local policies. The Director shall promptly refer the case to the appeals mechanism for review, if requested.

5.3.3 Requiring education to the level of approved proficiency for personnel within the EMS system. This includes all prehospital personnel, EMTs at all levels, prehospital emergency care nurses, dispatchers, educational coordinators, and physician providers of on-line direction (see Practice F 1031).

5.3.4 Suspending a provider from medical care duties for due cause pending review and evaluation.

5.3.4.1 Because the prehospital provider operates under the license (delegated practice) or direction of the Medical Director, the director shall have ultimate authority to allow the prehospital provider to provide medical care within the prehospital phase of the EMS system.

5.3.4.2 Whenever a Medical Director makes a decision to suspend a provider from medical care duties, the process shall be prescribed by previously established criteria.

5.3.5 Establishing medical standards for dispatch procedures to assure that the appropriate EMS response unit(s) are dispatched to the medical emergency scene when requested, and the duty to evaluate the patient is fulfilled.

5.3.6 Establishing under what circumstances non-transport might occur.

5.3.6.1 All decisions by prehospital providers regarding non-transport shall be based on defined protocol or on-line communications.

5.3.6.2 Develop a procedure for record keeping when the reason for non-transport was the result of a patient's refusal, including the appropriate forms and review process.

5.3.7 Establishing under which circumstances a patient may be transported against his or her will; in accordance with state law including, procedure, appropriate forms, and review process.

5.3.8 Establishing criteria for level of care and type of transportation to be used in prehospital emergency care (that is, advanced life support versus basic life support, ground, air, or specialty unit transportation).

5.3.9 Establishing criteria for selection of patient destination.

5.3.10 Establishing educational and performance standards for Communication Resource personnel.

5.3.11 Establishing operational standards for Communication Resource.

5.3.12 Conducting effective system audit and quality assurance.

5.3.12.1 The Medical Director shall have access to all relevant EMS records needed to accomplish this task. These documents shall be considered quality assurance documents and shall be privileged and confidential information.

5.3.13 Insuring the availability of educational programs within the system and that they are consistent with accepted local medical practice.

5.3.14 May delegate portions of his or her duties to other qualified individuals.

6. Direct Medical Control (On-Line Medical Direction)

6.1 *The Practice of Direct Medical Control:*

6.1.1 On-line medical direction capabilities shall exist and be available within the EMS system, unless impossible due to distance or geographic considerations.

6.1.1.1 All prehospital providers, above the certification of EMT basic, shall be assigned to a specific on-line communication resource by a predetermined policy.

6.1.2 Specific local protocols shall exist which define those circumstances under which on-line medical direction is required.

6.1.3 On-line medical direction is the practice of medicine and all orders to the prehospital provider shall originate from

or be under the direct supervision and responsibility of a physician.

6.1.4 The receiving hospital shall be notified prior to the arrival of each patient transported by the EMS system unless directed otherwise by local protocol.

6.2 *The On-Line Medical Physician:*

6.2.1 This physician shall be approved to serve in this capacity by the system Medical Director (off-line).

6.2.1.1 This physician shall have received education to the level of proficiency approved by the off-line Medical Director for proper provision of on-line medical direction, including communications equipment, operation, and techniques.

6.2.1.2 This physician shall be appropriately trained in prehospital protocols, familiar with the capabilities of the prehospital providers, as well as local EMS operational policies and regional critical care referral protocols.

6.2.2 This physician shall have demonstrated knowledge and expertise in the prehospital care of critically ill and injured patients.

6.2.3 This physician assumes responsibility for appropriate actions of the prehospital provided to the extent that the on-line physician is involved in patient care direction.

6.2.4 The on-line physician is responsible to the system Medical Director (off-line) regarding proper implementation of medical and system protocols.

7. Authority for Control of Medical Services at the Scene of Medical Emergency

7.1 *General:*

7.1.1 Control of a medical emergency scene shall be the responsibility of the individual in attendance who is most appropriately trained and knowledgeable in providing prehospital emergency stabilization and transport.

7.1.2 When an advanced life support (ALS) squad, under medical direction, is requested and dispatched to the scene of an emergency, a doctor/patient relationship has been established between the patient and the physician providing medical direction.

7.1.3 The prehospital provider is responsible for the management of the patient and acts as the agent of medical direction.

7.2 *Patient's Private Physician Present:*

7.2.1 When the patient's private physician is present and assumes responsibility for the patient's care, the prehospital provider should defer to the orders of the private physician if they do not conflict with established system protocols and the private physician documents the orders in a manner acceptable to the EMS system.

7.2.2 The Communication Resource shall be contacted for recordkeeping purposes to notify the on-line medical physician.

7.2.3 When the medical orders of the private physician differ from system protocol, Communication Resource shall be contacted and the private physician placed in communication with the on-line physician. If the private physician and the on-line physician are unable to agree on treatment, the private physician must either continue to provide direct patient care and accompany the patient to the hospital, or defer all remaining care to the on-line physician.

7.2.4 The prehospital provider's responsibility reverts to the systems Medical Director or on-line medical direction any time the private physician is no longer in attendance.

7.3 *Intervener Physician Present and Non-Existent On-Line Medical Direction:*

7.3.1 When an intervener physician has been satisfactorily identified as a licensed physician and has expressed his or her willingness to assume responsibility and document his or her intervention in a manner acceptable to the local emergency medical services system (EMSS), the prehospital provider should defer to the orders of the physician on the scene if they do not conflict with system protocols.

7.3.2 If treatment by the intervener physician at the emergency scene differs from that outlined in a local protocol, the physician shall agree in advance to assume responsibility for care, including accompanying the patient to the hospital.

7.3.3 In the event of a mass casualty incident or disaster, patient care needs may require the intervener physician to remain at the scene.

7.4 *Intervener Physician Present and Existent On-Line Medical Direction:*

7.4.1 If an intervener physician is present and on-line medical direction does exist, the on-line physician should be contacted and the on-line physician is ultimately responsible.

7.4.2 The on-line physician has the option of managing the case entirely, working with the intervener physician, or allowing him or her to assume responsibility.

7.4.2.1 If there is any disagreement between the intervener physician and the on-line physician, the prehospital provider should take orders from the on-line physician and place the intervener physician in contact with the on-line physician.

7.4.3 In the event the intervener physician assumes responsibility, all orders to the prehospital provider shall be repeated to the Communication Resource for purposes of recordkeeping.

7.4.4 The intervener physician should document his or her intervention in a manner acceptable to the local EMS.

7.4.5 The decision of the intervener physician to accompany the patient to the hospital should be made in consultation with the on-line physician.

7.5 Nothing in this section implies that the prehospital provider can be required to deviate from system protocols.

7.6 Air Medical Emergency Medical Service (EMS) Assistance at the Scene of a Medical Emergency (non-mass casualty):

7.6.1 Dispatch of air medical EMS assistance should be according to a pre-established state/regional/local EMS plan. Dispatch according to this pre-established EMS plan should take into account, for example, the patient's condition, response time, proximity of the receiving facility, geographical ease of access by ground, flight safety, and mechanism of injury.

7.6.1.1 The decision to request air medical EMS assistance at the scene of a medical emergency shall be the responsibility of a qualified individual, identified to assume such authority by the pre-established state/regional/local EMS plan.

7.6.2 When the air medical EMS assistance has arrived on the scene, the following shall apply:

7.6.2.1 There will be an orderly transfer of responsibility

from the local EMS unit to the air medical EMS unit and its medical control authority, according to local protocols. These protocols should include a method of determining when air transport is appropriate.

7.6.2.2 Medical direction (on-line/off-line) of the local EMS unit retains responsibility until formally relinquished to the medical direction (on-line/off-line) of the receiving air medical EMS unit.

7.6.2.3 If there is a physician on-board the air medical EMS unit, this physician shall be considered an intervenor physician, unless on-line medical direction transfers responsibility to the physician. (See 7.3 and 7.4.)

7.6.2.4 After responsibility has been transferred to the air medical EMS unit, the local EMS unit should cooperate with the air medical EMS unit, and/or assist the air medical EMS unit crew as long as they are not required to exceed the levels of intervention permitted by their certification.

7.6.3 Air medical EMS should offer assistance only when invited or requested, or both, unless no ground unit is available.

7.6.4 The transport destination for the patient should be based upon a pre-established EMS plan that considers time and distance as well as the patient's medical condition and the capability of the receiving facility.

7.6.4.1 If no pre-established EMS plan for patient transport exists, the transport should follow the usual transport pattern of the requesting local EMS unit, unless otherwise indicated by medical considerations.

8. Requirements for Communication Resource (Medical Control Resource)

8.1 Communication Resource shall be designated to participate in the EMS system according to a plan developed by a state or regional authority.

8.2 The Communication Resource shall meet the following requirements:

8.2.1 The Communication Resource shall assure adequate staffing for the communication equipment at all times by health care personnel who have achieved a minimal level of competence and skill and are approved by the system Medical Director.

8.2.2 The Communication Resource shall assure that all requests for medical guidance, assistance, or advice by prehospital personnel will be promptly accommodated with an attitude of utmost participation, responsibility, and cooperation.

8.2.3 The Communication Resource shall provide assurance that they will cooperate with the EMS system in collecting and analyzing data necessary to evaluate the prehospital care program as long as patient confidentiality is not violated.

8.2.4 The Communication Resource will consider the prehospital provider to be the agent of the on-line physician when they are in communication, regardless of any other employee/employer relationship.

8.2.5 The Communication Resource shall assure that the on-line physician will issue transportation instructions and hospital assignments based on system protocols and objective analysis of patient's needs and facility capability and proximity.

8.2.5.1 No effort will be made to obtain institutional or commercial advantages through the use of such transportation instructions and hospital assignments.

8.2.6 When the Communication Resource is acting as an agent for another hospital, the information regarding patient treatment and expected time of arrival will be relayed to the receiving hospital in an accurate and timely fashion.

8.2.7 Communication Resource shall conduct regular case conferences involving the on-line physicians and prehospital personnel for purposes of problem identification and provide continuing education to correct any identified problems.

8.3 If the Communication Resource is located within a hospital facility, the hospital shall meet the requirements listed in 8.1 and 8.2 and the equipment used for on-line medical direction shall be located within the Emergency Department.

9. Medical Direction During Interfacility Transfers (Non-Mass Casualty):

9.1 *General Principles:*

9.1.1 When an emergency patient arrives for initial evaluation at a medical facility, that patient becomes the responsibility of that facility and its medical staff. This responsibility continues until the patient is appropriately discharged, or until the patient is transferred and the responsibility is assumed by the personnel of a facility with equal or greater capability.

9.1.2 All transferring personnel should have standing orders or protocols available for use as appropriate, in the event of inability to communicate with on-line medical direction.

9.1.3 Patient medical records for any interfacility transfer shall be the responsibility of the transferring facility.

9.1.4 A patient not receiving treatment, and expected to remain stable during interfacility transport may, with physician approval, be transferred by an appropriate medical transportation provider with personnel certified at the level of Emergency Medical Technician-Basic, or greater.

9.1.5 When the patient has a probability of experiencing complications which cannot be managed within the scope of practice of non-physician personnel, the transfer shall be managed by an appropriately trained physician, either on-line or off-line.

9.2 *Interfacility Transfers Conducted by the Transferring Facility:*

9.2.1 When a patient is transferred to another facility, is receiving treatment, medically unstable, or potentially medically unstable, it is the responsibility of the transferring facility to assure that the medical transport agency has qualified personnel and transportation equipment to complete the transfer.

9.2.2 The transferring personnel shall act as the agents of the transferring facility and the physician approving the transfer, regardless of any other employer/employee relationship. Communication between the transferring physician, the prehospital on-line medical direction, and the transferring personnel is required, with agreement between physicians regarding medical care. (See 7.2.1 and 7.2.3.)

9.2.3 When a patient experiences complications beyond situations addressed in physician written orders, or beyond off-line protocols, the medical transport provider should, if

possible, contact the transferring facility or the receiving facility for additional orders. Or, if deemed necessary, the EMS on-line medical direction should be contacted for consultation.

9.3 Interfacility transfers conducted by a receiving facility when the transferring personnel are agents of the receiving facility:

9.3.1 When the transferring personnel includes a physician, the patient becomes the responsibility of the receiving facility as soon as the patient leaves the transferring facility.

9.3.2 When the transferring team does not include a physician, the physician from the receiving facility who authorizes the transfer is responsible for the patient. The receiving facility must assure that the medical transport team has qualified personnel and transportation equipment to complete the transport.

10. Keywords

10.1 aeromedical; interfacility; medical control; medical direction; on-line/off-line

AMERICAN ACADEMY OF PEDIATRICS

Guidelines for Pediatric Emergency Care Facilities

Committee on Pediatric Emergency Medicine

Emergency care for life-threatening pediatric illness and injury requires specialized resources including equipment, drugs, trained personnel, and facilities. The American Medical Association Commission on Emergency Medical Services has provided guidelines for the categorization of hospital pediatric emergency facilities that have been endorsed by the American Academy of Pediatrics (AAP).[1] This document was used as the basis for these revised guidelines, which define:

1. The desirable characteristics of a system of Emergency Medical Services for Children (EMSC) that may help achieve a reduction in mortality and morbidity, including long-term disability.
2. The role of health care facilities in identifying and organizing the resources necessary to provide the best possible pediatric emergency care within a region.
3. An integrated system of facilities that provides timely access and appropriate levels of care for all critically ill or injured children.
4. The responsibility of the health care facility for support of medical control of pre-hospital activities and the pediatric emergency care and education of pre-hospital providers, nurses, and physicians.
5. The role of pediatric centers in providing outreach education and consultation to community facilities.
6. The role of health care facilities for maintaining communication with the medical home of the patient.

Children have their emergency care needs met in a variety of settings, from small community hospitals to large medical centers. Resources available to these health care sites vary, and they may not always have the necessary equipment, supplies, and trained personnel required to meet the special needs of pediatric patients during emergency situations.

Timely, effective pediatric emergency care depends on a network of pre-hospital and hospital medical and administrative resources. For a system of pediatric emergency care to be developed, the capabilities of the emergency care facility for pediatric treatment must be categorized. Once health care facilities are categorized according to their emergency capabilities, a network must be developed within a region that assures access to specialized care, avoids duplication of services, and assures that services are available to all infants and children. This process of categorization and regionalization of pediatric emergency facilities requires the cooperation of hospitals and emergency medical services (EMS) systems within a region.

These guidelines are designed to assist health care facilities within a region to meet the emergency care needs of children. A framework is offered that integrates the resources of facilities to assure access to appropriate levels of care, including specialized services for children wherever the entry point into the system.

Many children access emergency care at community hospitals that must take responsibility for the triage and stabilization of critically ill or injured pediatric patients. Most hospitals provide basic pediatric emergency services. However, a system that assures comprehensive care is often not available. The development of a regionalized cooperative network of EMS-EMSC allows rural and community hospitals access to a system that assures integration with more specialized facilities.

Each state, region, or local area has different administrative structures and organizations responsible for the administration of an EMS-EMSC system. Each hospital within the system is a component of EMSC. Pre-hospital care is often not the direct responsibility of a health care facility, but each facility must support and cooperate with their pre-hospital system to assure a functioning pediatric emergency care network. This cooperation may include assisting pre-hospital care providers and services with education, training, and consultation. Every health care facility that is a component of EMSC has a responsibility to accept appropriate patients, provide pre-hospital guidance when necessary, stabilize pediatric emergencies, and, when appropriate, transport patients to a definitive care facility.

Small community facilities (such as standby or basic) within an EMS-EMSC system are responsible for accepting critically ill and/or injured children who do not have immediate access to definitive care resources because of geographical restrictions, and they must have the equipment and skilled personnel necessary to recognize, stabilize, and support the timely transport of pediatric patients to a prearranged definitive care resource.

The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.

PEDIATRICS (ISSN 0031 4005).

TABLE 1. Resources Necessary for the Optimal Care of the Injured Child

Regional Pediatric Trauma Center		Trauma Center With Pediatric Commitment
E*	Pediatric Surgeon General Surgeon	D E†
Children's hospital or general hospital with a separate pediatric department	Hospital	General hospital with an organized pediatric service
Pediatric emergency department with appropriate personnel, equipment, and facilities	Emergency Department	Pediatric capabilities in an emergency department equipped and staffed by personnel trained to care for pediatric trauma victims
Pediatric Intensive Care Unit (ICU) with pediatric surgery and other surgical, medical, and nursing personnel and equipment needed to care for the injured child	ICU	ICU with personnel and equipment appropriate for care of the injured child
Pediatric trauma service organized and run by a pediatric surgeon	Trauma Service	Pediatric trauma program administered by a surgeon†
1. Pediatric Surgeon 2. Pediatric Orthopaedist 3. Pediatric Neurosurgeon 4. Pediatric Anesthesiologist 5. Pediatric Intensivist 6. Pediatric Emergency Physicians 7. Pediatric Radiologists 8. Other Pediatric Surgical Specialists 9. Other Medical Pediatric Specialists 10. Pediatric Trauma Coordinator 11. Pediatric Trauma Nurse	Trauma Team	1. Pediatric Surgeon (D) 2. General Surgeon 3. Orthopaedist 4. Neurosurgeon 5. Surgical Critical Care Specialists 6. Emergency Physician 7. Radiologists 8. Trauma Coordinator 9. Pediatric-trained Trauma Nurses
E	Pediatric Trauma Quality Improvement	E
E	Psychosocial Services	D
E	Rehabilitation	D

Source: *Resources for Optimal Care of the Injured Patient*, American College of Surgeons Committee on Trauma.[4]
Abbreviations: E, essential; D, desirable.
* A pediatric surgeon credentialed in trauma care will be promptly available. This responsible pediatric surgeon will be present in the operating room for any and all operative procedures. A general surgical resident at a minimum PGY-4 level may initiate resuscitative care until the attending pediatric surgeon arrives.
† The trauma surgeon available for pediatric trauma care must have special interest in and commitment to care of the injured child. This should be demonstrated by documented continuing medical education.

Between the small community hospital and the comprehensive regional pediatric center (CRPC) are a number of hospitals that have the capability of providing some, but not all, of the resources needed for definitive care of critical pediatric emergencies. The goals are provided here for such hospitals to facilitate the implementation of a regionalized EMS-EMSC system and assist in organizing a network of pediatric emergency care.

The CRPC has the most available resources and must have a major role in organizing and implementing a regional EMSC system. The CRPC must provide pediatric consultation and support as needed to hospitals and EMS agencies within the region, including systems development, transport, quality review, education, research, and data maintenance.

Because areas will exist where access to a CRPC is impeded by geographical or political boundaries, physicians and health planners in all regions must review the capabilities of their institutions, identify areas of concern, and seek solutions either by developing the requisite resources or by identifying resource centers that will accept their patients. A comprehensive approach is necessary with clear expectations that high acuity patients will be transferred to an appropriate CRPC to prevent avoidable morbidity and mortality.[2,3] For example, comprehensive pediatric trauma centers meeting the requirements of a CRPC can provide the major trauma pediatric patient access to specialized pediatric care including surgery, critical care, and pediatric medical and surgical subspecialties. Such centers afford this subset of pediatric patients the best opportunity for maximum functional recovery. Trauma care for children may not be equivalent between adult and pediatric trauma centers even though mortality statistics may be similar. Trauma centers that do not meet these pediatric guidelines for a CRPC should, when possible, divert high acuity pediatric patients to a CRPC. In areas where an adult center must assume responsibility for the initial care of children, clear guidelines must be in place for the transfer of critical patients to a regional center for pediatric trauma and critical care.[5] Circumstances may dictate that adult trauma centers with a commitment to children provide definitive care for children. Studies of treatment outcome should be in place to assure that the standard of care is equivalent to that of a CRPC. Table 1 contains program qualifications for pediatric trauma care as defined by the American College of Surgeons for comparison.

These guidelines are designed to assist hospitals in defining their pediatric emergency capabilities and are intended to assist communities in reducing morbidity, mortality, and disability. The six areas of emergency care for review include: 1) facilities; 2) personnel; 3) equipment and supplies; 4) access, triage, transfer, and transport; 5) education, training,

research, and quality assessment; and 6) administrative support and hospital commitment.

PEDIATRIC EMERGENCY CARE FACILITY CAPABILITIES

Standby Pediatric Emergency Facility

A standby pediatric emergency service is:

- Capable of identifying critically ill or injured or potentially critically ill or injured patients.
- Capable of stabilizing the pediatric patient, including the management of airway, breathing, and circulation.
- Responsible for assuring timely access to a definitive care facility.
- Staffed by a registered nurse (RN) or physician's assistant who works under the direct supervision of a physician with pediatric experience. Supervision may be by protocols, standing orders, and/or telephone access, but the physician must be promptly available to respond to emergencies.

Basic Pediatric Emergency Facility

A basic facility in a system:

- Provides appropriate identification, stabilization, and transport as described for the standby facility.
- Has a physician in-house 24 hours a day, 7 days a week for emergency care.
- Has limited ward capabilities for the management of minor pediatric inpatient problems.
- Is willing to accept the transfer of appropriate pediatric patients from a standby facility when no facility with more comprehensive capabilities is available within a region.

General Pediatric Emergency Facility

A general facility in a system:

- Has a defined separate pediatric inpatient service.
- Has a department of pediatrics within the medical staff structure.
- Accepts referrals of appropriate pediatric patients from standby and basic hospitals as a part of prearranged triage, transfer, and transport agreements.

Comprehensive Regional Pediatric Center (CRPC)

The regional center:

- Is capable of providing comprehensive specialized pediatric medical and surgical care to all acutely ill and injured children, or in special circumstances providing safe and timely transfer of children to other resources for specialized care.
- Is responsible for serving as a regional referral center for the specialized care of pediatric patients.
- Actively supports systems development, including:
  1. assistance and support of education for prehospital personnel.
  2. education and training for all levels of hospital-based health care providers.
  3. provision of transport services or assurance that appropriate transport services are available for the transfer of critically ill or injured pediatric patients.
  4. provision of comprehensive pediatric subspecialty medical and surgical consultation to health care facilities and providers within a region.
  5. a commitment to research, systems development, quality assessment and improvement, data collection and analysis, and injury prevention.
  6. assurance of available rehabilitation services for children.

Emergency staff in all facilities must be able to provide information on patient encounters to the patient's *medical home*. This may be through telephone contact with the primary care provider at the time of encounter, faxing or mailing the medical record, or providing patients with a copy of the medical record to bring to their physician. Follow-up visits should be arranged or recommended with the primary care provider whenever necessary.

Table 2 provides a summary of the guidelines for emergency care facilities for each level of pediatric health care. Personnel, equipment, and issues that are essential at each level are described as either being essential in the emergency department (EED), essential within the hospital (EH), or promptly available (EP). An optional but strongly encouraged category (SE) is used to describe personnel, activities, or issues that may be essential to network a comprehensive regionalized EMS-EMSC system in rural areas. Although these are not generally required of a specific hospital, they are strongly encouraged if such services are not available within a reasonable distance. Specialist consultants should be board certified or board prepared and actively seeking certification in disciplines in which a specialty exists. A CRPC should be staffed with specialist consultants with pediatric subspecialty training. The following narrative is provided to clarify issues that are difficult to include in a table form. Issues highlighted by an asterisk in the table are explained in the text.

GUIDELINES FOR A STANDBY PEDIATRIC EMERGENCY FACILITY

Personnel

At least one RN or physician's assistant must be physically present 24 hours per day, 7 days per week, and capable of recognizing and managing shock and respiratory failure and stabilizing pediatric trauma patients, including early recognition and stabilization of problems that may lead to shock and respiratory failure. Successful completion of courses such as the American Heart Association Pediatric Advanced Life Support (PALS) or the Emergency Nurses Association Emergency Nursing Pediatric Course (ENPC) can be utilized to demonstrate this clinical capability.

An on-call physician must be promptly available and provide supervision and direction for the in-

TABLE 2. Guidelines for Emergency Pediatric Care Facilities

	Facility Levels			
	CRPC	General	Basic	Standby
Personnel				
Physician with pediatric emergency care experience*	EED	EED	EED	EP
RN with pediatric training*	EED	EED	EED	EED
Respiratory therapist	EH	EH	EH	
Trauma coordinator	E	E		
Nurse educator	E	E		
Trauma team*	E	E	SE	
Specialist consultants*				
Pediatrics	EH	EP	EP	SE
Radiology	EP	EP	EP	SE
Anesthesiology*	EH	EH	EP	SE
Cardiology	EP			
Critical Care	EH	EP		
Nephrology	EP			
Hematology/oncology	EP			
Endocrinology	EP			
Gastroenterology	EP			
Allergy	EP			
Neurology	EP			
Pulmonology	EP			
Psychiatry	EP			
Infectious Disease	EP			
Surgical specialists*				
General surgeon		EH	EP	SE
Pediatric surgeon	EH	SE		
Neurosurgery	EP	EP		
Orthopedics	EP	EP	EP	
Otolaryngology	EP			
Urology	EP			
Plastic surgery	EP			
Oral/maxillofacial	EP			
Gynecology	EP			
Microvascular surgery	EP			
Hand surgery	EP			
Ophthalmology	EP			
Cardiac surgery	EP			
Equipment and Supplies				
EMS communication equipment*	E	E	E	E
Organized emergency cart*	EED	EED	EED	EED
Printed drug doses/tape	EED	EED	EED	EED
Monitoring devices				
ECG monitor/defibrillator with pediatric paddles 0–400 joules and hard copy capabilities	EED	EED	EH	EH
Pulse oximeter (adult/pediatric probes)	EED	EED	EH	EH
Blood pressure cuffs (infant, child, adult, thigh)	EED	EED	EED	EED
Rectal thermometer probe (28°–42°C)	EED	EED	EH	EH
Otoscope, ophthalmoscope, stethoscope	EED	EED	EED	EED
Cardiopulmonary monitor with pediatric capability	EED	EED	EED	EH
Doppler and noninvasive blood pressure monitoring (infant, child, adult cuffs)	EED	EED	EH	
Apnea/respiratory monitor	EED	EED	SE	
End tidal CO_2 monitor	EED	EH	SE	
Monitor for central venous pressure, arterial lines	EED	EH	SE	
Airway control/ventilation equipment				
Bag-valve-mask device: pediatric (450 mL), and adult (1000 mL) with oxygen reservoir and without pop-off valve. Infant, child, and adult masks	EED	EED	EED	EED
Oxygen delivery device with flow meter	EED	EED	EED	EED
Clear oxygen masks, standard and non-rebreathing (neonatal, infant, child, adult)	EED	EED	EED	EED
Nasal cannula (infant, child, adult)	EED	EED	EED	EED
Suction devices–catheters 6–14 fr, yankauer–tip	EED	EED	EED	EED
Oral airways (sizes 0–5)	EED	EED	EED	EED

Abbreviations: E, essential; EED, essential in emergency department (ED); EH, essential in hospital; EP, promptly available (within 20–30 min when possible); SE, strongly encouraged if such services are not available within a reasonable distance. *, See text for further definition.

TABLE 2. Continued

	Facility Levels			
	CRPC	General	Basic	Standby
Nasal airways (infant, child, adult)	EED	EED	EED	EED
Nasogastric tubes (sizes 6–16 fr)	EED	EED	EED	EED
Laryngoscope handle and blades:				
- curved 2,3	EED	EED	EED	EED
- straight or Miller 0,1,2,3	EED	EED	EED	EED
Endotracheal tubes:				
- uncuffed (2.5–5.5)	EED	EED	EED	EED
- cuffed (6.0–9.0)	EED	EED	EED	EED
Stylets for endotracheal tubes (pediatric, adult)	EED	EED	EED	EED
Lubricant, water soluble	EED	EED	EED	EED
Magill forceps (pediatric, adult)	EED	EED	EED	EED
Tracheostomy tubes (shiley sizes 0–6)	EED	EH	EH	
Oxygen blender	EED	EED	EED	EED
Pediatric endoscopes and bronchoscopes available	EH	EH		
Pediatric ventilators	EH	EH		
Vascular access supplies				
Arm boards (infant, child, and adult sizes)	EED	EED	EED	EED
Butterflies (19–25 gauge)	EED	EED	EED	EED
Catheters for intravenous lines (16–24 gauge)	EED	EED	EED	EED
Needles (18–27 gauge)	EED	EED	EED	EED
Intraosseous needles	EED	EED	EED	EED
Umbilical vessel catheters (3,5 fr)	EED	EED	EED	EED
IV administration sets and extension tubing with calibrated chambers	EED	EED	EED	EED
Extension tubing, stopcocks, T-connectors	EED	EED	EED	EED
Infusion device with the ability to regulate rate and volume of infusate	EED	EED	EED	EED
Isotonic balanced salt solution and D_5 0.5 normal saline	EED	EED	EED	EED
Central venous access utilizing Seldinger technique (4–7 fr)	EED	EED	EED	
IV fluid/blood warmer	EED	EED	EH	
Blood gas kit	EED	EED	EH	
Rapid infusion pumps and fluid warmers	EED	EED	SE	
Specialized pediatric trays				
Lumbar puncture	EED	EED	EED	EH
Urinary catheterization: Foley 8–14 fr	EED	EED	EED	EH
Newborn kit/obstetric pack	EED	EED	EED	EED
Venous cutdown	EED	EED	EH	EH
Umbilical vessel cannulation	EED	EED	EH	EH
Thoracostomy tray with chest tube sizes 10–28 fr	EED	EED	SE	
Peritoneal lavage tray	EED	EED	SE	
Needle cricothyroidotomy set	EED	EED	EED	
Intracranial pressure monitor tray	EED	SE		
Subdural tray	EED	SE	SE	
Tracheostomy tray	EED	EED	SE	
Fracture management devices				
Cervical immobilization equipment suitable for pediatric patients	EED	EED	EED	EED
Spine board (child/adult)	EED	EED	EED	EED
Extremity splints	EED	EED	EED	EED
Femur splint; child, adult	EED	EED	EED	EED
Medications–unit dose, prepackaged				
Activated charcoal	EED	EED	EED	EED
Adenosine	EED	EED	EED	EED
Atropine	EED	EED	EED	EED
Beta-agonist for inhalation	EED	EED	EED	EED
Bretylium	EED	EED	EH	
Calcium chloride	EED	EED	EED	EED
Corticosteroids (dexamethasone, methylprednisolone)	EED	EED	EED	EED
Cyanide kit and pediatric doses	EED	EED	EED	
Dextrose–25% and 50%	EED	EED	EED	EED
Digitalis antibody	EH	EH	EH	
Diphenhydramine	EED	EED	EED	EED
Dobutamine	EED	EED	EH	
Dopamine	EED	EED	EH	
Epinephrine (1:1000, 1:10 000)	EED	EED	EED	EED
Factor VIII, IX concentrates, DDAVP	EH	EH	EH	
Flumazenil	EH	EH	EH	EH

TABLE 2. Continued

	Facility Levels			
	CRPC	General	Basic	Standby
Furosemide	EED	EED	EED	EED
Glucagon	EED	EED	EED	
Insulin	EH	EH	EH	
Ipecac	EED	EED	EED	EED
Kayexalate	EH	EH	EH	
Ketamine	EED	EH	EH	
Lidocaine–1%	EED	EED	EED	EED
Mannitol–20%	EED	EED	EED	EED
Methylene blue	EH	EH	EH	EH
N-acetyl cysteine	EH	EH	EH	
Naloxone	EED	EED	EED	EED
Potassium chloride	EED	EED	EED	
Prostaglandin E_1	EH	EH		
Sodium bicarbonate 7.5% and 4.2%	EED	EED	EED	EED
Succinylcholine	EED	EED	EH	
Thiopental	EED	EH	EH	
Whole bowel irrigation solution	EH	EH	EH	
Drug classes				
Analgesics	EED	EED	EH	EH
Antibiotics	EED	EED	EED	EED
Anticonvulsants	EED	EED	EED	EED
Antihypertensive agents	EED	EED	EH	EH
Antipyretics	EED	EED	EED	EED
Chelating agents for heavy metal poisonings	EH	EH	EH	
Nondepolarizing neuromuscular blocking agents	EED	EED	EED	
Miscellaneous				
Resuscitation board	EED	EED	EED	EED
Infant scale	EED	EED	EED	EED
Heating source (for infant warming)	EED	EED	EED	EED
Precalculated drug sheets or length-based tape	EED	EED	EED	EED
Pediatric restraint equipment (to use for painful or difficult procedures)	EED	EED	EED	
Portable radiography	EED	EH	EH	
Slit lamp	EH	EH	EH	
Pacemaker capability (ie, temporary transcutaneous and transvenous pacemaker with pediatric capability)	EH	EH		
Thermal control for patient and/or resuscitation room	EED	EED	EED	
Facilities				
Emergency Area				
Open 24 hours per day	E	E	E	E
Well-lighted emergency entrance with ambulance access	E	E	E	E
Separate pediatric resuscitation area	E	E		
Separate pediatric	E			
Access to helicopter landing site	E	E	E	E
Hospital support services				
Pediatric ward for inpatient care	E	E		
Pediatric intensive care unit (AAP/SCCM standards)*				
Level I	E			
Level II		E		
Child abuse team	EP	EP		
Child life support	EH			
Operating room staffed 24 hours per day	E	E	SE	
Anesthesia and surgical suite promptly available	E	E	SE	
Laboratory services				
Hematology	E	E	E	E
Chemistry	E	E	E	E
Microbiology	E	E	E	SE
Microcapabilities	E	E		
Blood bank	E	E	SE	
Drug levels/toxicology	E	SE	SE	
Blood gases	E	E	E	
Radiology services (on-call)				
Routine services 24 hours per day	E	E	E	E
Computed tomography scan 24 hours per day	E	E	SE	
Ultrasound 24 hours per day	E	E	SE	
Magnetic resonance imaging availability/transfer	E	E		

TABLE 2. Continued

	Facility Levels			
	CRPC	General	Basic	Standby
Nuclear medicine	E	SE		
Fluoroscopy/contrast studies 24 hours per day	E	E	SE	
Angiography 24 hours per day	E	SE		
Echocardiography	E	E	SE	
Electroencephalography	E	E	SE	
Access to				
Regional poison control center	E	E	E	E
Hemodialysis capability/transfer agreement	E	E	E	
Rehabilitation medicine/transfer agreement	E	E	SE	
Acute spinal cord injury management capability/transfer agreement	E	E	SE	
Hyperbaric oxygen chamber availability/transfer agreement when appropriate	E	E	SE	
Access, Triage, Transfer, and Transport				
Support of medical control*	E	E	SE	SE
Accept call-ahead ambulance information	E	E	E	E
Transfer agreements for:				
In-patient pediatric care			E	E
ICU pediatric care		E	E	E
Major trauma care		E	E	E
Burn care	E	E	E	
Hemodialysis	E	E	E	
Spinal injury care	E	E	E	
Rehabilitation care	E	E	E	
Accept all critically ill patients from lower-level hospitals within a region	E	SE	SE	
Access to transport services appropriate for pediatrics	E	E	E	E
Provide 24-hour consultation to lower-level facilities	E			
Consultation agreements with CRPC		E	E	
Education, Training, Research, and Quality Assessment and Improvement*				
Education and Training				
Public education, injury prevention	E	E	SE	SE
Assure staff training in resuscitation and stabilization	E	E	E	E
Assist with pre-hospital education	E	SE	SE	SE
Network educational resources for training all levels of health professionals	E	SE		
Research				
Support state EMSC and CRPC research efforts and data collection	E	E	E	E
Participate in and/or maintain trauma registry	E	E	SE	
Organized research program	E			
Quality Assessment and Improvement				
Structured QA/QI program with indicators and periodic review	E	E	E	E
Participate in regional quality review by CRPC and/or local EMS authority	E	E	E	E
Administrative Support and Hospital Commitment*				
Make available clinical resources for training pre-hospital personnel	E	SE	SE	
Assure properly trained ED staff	E	E	E	E
Assure availability of all necessary equipment/supplies/protocols/agreements/policies	E	E	E	E
Provide emergency care and stabilization for all pediatric patients	E	E	E	E
Support networking education/training for all health care professionals	E	SE	SE	SE
Assure appropriate medical control and input to ED management and pediatric care	E	SE	SE	SE
Participate in networking pediatric emergency care within a region	E	E	E	E
Assure transport services and agreements are available	E	E	E	E
Assure resources available for data collection	E	E	E	E
Assure availability of:				
Social services	EH	EH		
Child abuse support services	EP	EP		
Child life support	E			
On-line pre-hospital control	E	SE	SE	SE
Respiratory care	EED	EH	EH	
Child development services	E			

Abbreviations: RN, registered nurse; EMS, emergency medical services; ECG, electrocardiogram; CO_2, carbon dioxide; IV, intravenous; ED, emergency department; AAP, American Academy of Pediatrics; SCCM, Society of Critical Care Medicine; ICU, intensive care unit; CRPC,comprehensive regional pediatric center; EMSC, emergency medical services for children.

house nursing staff. The physician must be competent in the care of pediatric emergencies including the recognition and management of shock and respiratory failure, the stabilization of pediatric trauma patients, advanced airway skills (intubation, needle thoracostomy), vascular access skills (including intraosseous needle insertion), and be able to perform a thorough screening neurologic assessment and to

interpret physical signs and laboratory values in an age-appropriate manner. Successful completion of courses such as PALS and the American Academy of Pediatrics and American College of Emergency Physician's Advanced Pediatric Life Support (APLS) can be utilized to demonstrate this clinical capability.

An on-call system is necessary for access to physicians who have advanced airway and vascular access skills as well as for general surgery and pediatric specialty consultation. There should be one additional call-in RN available for emergencies.

Equipment and Supplies

Equipment for communication with EMS is essential if there is no higher-level facility capable of receiving ambulances or there are no resources for providing medical control to the pre-hospital system.

An emergency cart or other system to organize supplies including resuscitation equipment, drugs, printed pediatric drug doses, and pediatric reference materials must be readily available. Equipment, supplies, trays, and medications should be easily accessible, labeled, and logically organized. Antidotes necessary for a specific geographic area should be determined through consultation with a poison control center.

Facilities

See Table 2.

Access, Triage, Transfer, and Transport

A standby facility needs to be capable of providing resuscitation, stabilization, and timely triage for all pediatric patients, and, when appropriate, transfer of patients to a higher-level facility. Necessary triage and transfer agreements depend on available community resources and are listed in Table 2. A standby facility is responsible for having appropriate transfer agreements to assure that all pediatric patients receive timely emergency care at the most appropriate pediatric facility available to a specific region. This facility must be linked with a CRPC for pediatric consultation.

Education, Training, Research, and Quality Assessment and Improvement

A standby facility must:

- Provide public education regarding access to pediatric emergency care.
- Provide patient data and information in support of regional and state EMS-EMSC data collection efforts.
- Organize a structured quality assurance and improvement program that reviews the following issues and indicators:
  1) pediatric deaths.
  2) incident reports.
  3) transfers.
  4) child abuse cases.
  5) cardiopulmonary or respiratory arrests.
  6) admissions within 48 hours of an emergency department (ED) visit.
  7) surgery after being discharged from an ED within 48 hours.
  8) quality indicators requested by the CRPC or state/local EMSC authority regarding nursing care, physician care, pre-hospital care, and the medical direction for pre-hospital providers of EMS systems.

Administrative Support and Hospital Commitment

A standby facility must have the hospital administrative support to:

- Assure that properly trained and adequate personnel provide the emergency services expected at that level of facility.
- Assure that financial resources are available to provide the ED with the equipment necessary for the level of facility as described in these guidelines.
- Assure that facilities are designed for easy access and are appropriate for the care of pediatric patients as described in these guidelines.
- Provide access to emergency care for all urgent and emergent pediatric patients.
- Participate in developing a network of pediatric emergency care within a region by linking the facility with a regional referral center to:
  1) guarantee transfer and transport agreements.
  2) refer serious and critically ill patients and special problem patients to an appropriate facility.
- Work collaboratively with the regional EMS-EMSC authority to support educational programs for pre-hospital personnel, nurses, and physicians.
- Work collaboratively with the CRPC and regional EMS-EMSC authority to assure that the data collection and quality indicators established by the state/local EMS-EMSC agency are monitored and available.
- Assure linkage with pre-hospital care and transport.

  Assure that the ED has a:
  1) medical director.
  2) physician coordinator for pediatric emergency care with experience as defined in the Personnel section of the guidelines for a standby pediatric emergency facility.
  3) Nursing coordinator for pediatric emergency care.
- Establish policies, procedures, or protocols for pediatric emergency patients to include:
  1) medical triage.
  2) general assessment.
  3) safety.
  4) child abuse and neglect.
  5) consent.
  6) transfers.
  7) do-not-resuscitate orders.
  8) death in the ED (including sudden infant death syndrome) and the care of the grieving family.
  9) conscious sedation.

GUIDELINES FOR A BASIC PEDIATRIC EMERGENCY FACILITY

Guidelines include all of the activities and issues described under standby facilities in addition to the following:

Personnel

A basic pediatric facility requires the presence of an emergency physician in-house 24 hours per day, 7 days per week. A pediatrician, general surgeon with trauma experience, anesthesiologist, and radiologist must be promptly available 24 hours per day.

Equipment and Supplies

See Table 2.

Facilities

See Table 2.

Access, Triage, Transfer, and Transport

A basic facility must support standby facilities within a region when necessary by having triage and transfer agreements to receive appropriate patients as a part of a regional pediatric care network.

Education, Training, Research, and Quality Assessment and Improvement

A basic facility must:

- Participate in a network of public education that addresses:
  1) access to pediatric emergency care.
  2) injury prevention.
  3) first aid and cardiopulmonary resuscitation.
- Organize a quality assurance and improvement program that reviews the issues described under the standby facilities in addition to:
  1) a review of pediatric transports to and from the facility.
  2) a review of pediatric inpatient illness and injury outcome data.

Administrative Support and Hospital Commitment

A basic facility must provide administrative support to:

- Assure that properly trained and adequate personnel provide the emergency services expected at that level of facility.
- Assure that financial resources are available to provide the ED with the equipment necessary for the level of facility as described in these guidelines.
- Assure that facilities are designed for easy access and are appropriate for the care of pediatric patients as described in these guidelines.
- Provide access to emergency care for all urgent and emergent pediatric patients regardless of financial status.
- Participate in developing a network of pediatric emergency care within a region by linking the facility with a regional referral center to:
  1) guarantee transfer and transport agreements.
  2) refer serious and critically ill patients and special problem patients to an appropriate facility.
  3) assure the support of agreements to receive appropriate patients from lower-level facilities.
- Assure that the necessary education and training are available for health care staff as described in these guidelines.
- Work collaboratively with the EMS-EMSC system to provide education to pre-hospital personnel, nurses, and physicians.
- Actively participate in data collection to assure that the quality indicators established by the regional resource center are monitored, and make data available to the regional resource center or a central data monitoring agency.
- Assure the facility is linked with pre-hospital care and transport.
- Provide access to social services and child abuse support services.

GUIDELINES FOR A GENERAL PEDIATRIC EMERGENCY FACILITY

For large metropolitan or regional hospitals with significant pediatric patient volumes, a separate pediatric emergency area is strongly recommended. This area should be staffed by pediatricians or emergency physicians who are committed to pediatric emergency care.

Guidelines include all activities and issues under the basic facilities in addition to the following:

Personnel

Physician Coverage

Pediatricians or emergency physicians with the skills, knowledge, and commitment to care for critically ill or injured children are present in the ED 24 hours per day (pediatric emergency physician, pediatrician, or emergency physician).

Pediatric Trauma Team

- A pediatrician, emergency physician, or pediatric emergency physician.
- A trauma surgeon with pediatric trauma experience and training.
- Three RNs with emergency, critical care, pediatric, or surgical experience.
- A neurosurgeon who is promptly available.
- An orthopedic surgeon who is promptly available.
- An anesthesia resident or certified nurse anesthetist, both with pediatric experience, may be in-house with an anesthesiologist promptly available.
- A respiratory therapist, laboratory technician, radiology technician, and social worker readily available.
- A trauma coordinator who is responsible for data collection, quality assurance, and education.

Nursing Staff

- At least one nurse per shift with pediatric emergency nursing experience (PALS, ENPC, or equivalent)
- A pediatric nurse educator.

Equipment and Supplies

See Table 2.

Facilities

A general facility must have access to a Pediatric Intensive Care Unit (level 1 or 2 per AAP/SCCM

standards).[4] This requirement may be fulfilled by having transfer and transport agreements available for moving critically ill or injured patients to a CRPC.

Access, Triage, Transfer, and Transport

See Table 2.

Education, Training, Research, and Quality Assessment and Improvement

When a CRPC is not available to a region, a general facility must:

- Assist the state/local EMS-EMSC authority in organizing a network of public education with the basic and standby EDs as resources for the dissemination of information.
- Assist the state/local EMS-EMSC authority in providing support for the education, skills training, and dissemination of new information to pre-hospital care providers utilizing the resources of basic and standby hospitals.

A general facility must:

- Collaborate and work closely with a CRPC to assure that health care workers in the facility and region have access to continuing education in order to maintain and update their skills for recognizing and stabilizing pediatric emergencies.
- Collaborate with the CRPC to organize regional research and assist the state/local EMS-EMSC authority with data collection and maintenance.
- Collaborate with the CRPC and the state/local EMS-EMSC authority to organize the quality indicators appropriate for regional periodic review of participating health care facilities.
- Participate in a pediatric trauma registry.

Administrative Support and Hospital Commitment

A general facility must:

- Assure that properly trained and adequate personnel provide emergency services.
- Assure that financial resources are available to provide the ED with the equipment necessary for the level of facility as described in these guidelines.
- Assure that facilities are designed for easy access and are appropriate for the care of pediatric patients as described in these guidelines.
- Provide access to emergency care for all urgent and emergent pediatric patients.
- Participate in developing a network of pediatric emergency care within a region by linking the facility with a regional referral center to:
  1) guarantee transfer and transport agreements.
  2) refer serious and critically ill patients and special problem patients to an appropriate facility.
  3) assure support of agreements to receive appropriate patients from lower-level facilities.
- Assure that the necessary education and training are available for the health care staff as described in these guidelines.
- Work collaboratively with the CRPC to support education for pre-hospital personnel, nurses, and physicians.
- Actively participate in data collection to assure that quality indicators are monitored.
- Assure that the facility is linked with pre-hospital care and transport.
- Have a physician director of the ED who is board certified/prepared in emergency medicine or pediatric emergency medicine.
- Have an ED nursing director.
- Develop and monitor pediatric emergency and critical care protocols, policies, and quality improvement and management programs with the formal involvement of the Department of Pediatrics.

COMPREHENSIVE REGIONAL PEDIATRIC CENTER

Guidelines for a comprehensive regional pediatric center include all of the activities and issues under general facilities in addition to the following:

Personnel

Physician Coverage

- Twenty-four-hour ED coverage by physicians who are board certified, board eligible, or fellows (second-year level or above) in pediatric emergency medicine.

Pediatric Trauma Team

- A pediatric emergency physician.
- A pediatric trauma surgeon (a PGY-4 or greater surgical resident in-house with a pediatric surgeon promptly available).
- One additional MD team member (a surgery or pediatric resident).
- Three RNs with pediatric emergency, pediatric critical care, or pediatric surgical experience as well as training in trauma care.
- A neurosurgeon who is promptly available.
- An orthopedic surgeon who is promptly available.
- A nurse anesthetist or anesthesia resident in-house, both with pediatric experience, with an anesthesiologist who is promptly available.
- A pediatric respiratory therapist, laboratory technician, and radiology technician.
- A computed tomography technician in-house. The technician may be on-call and promptly available if the specific clinical needs of the hospital make this necessary and it does not have an adverse impact on patient care.
- Social services that are promptly available.
- A pediatric trauma coordinator who is responsible for data collection, quality improvement, and education, and may include case management.

Nursing Staff

- A pediatric ED nursing director.
- An RN responsible for ongoing staff education.
- General staff experienced in pediatric emergency and trauma nursing care.

See Table 2 for on-call pediatric specialists and surgical support.

Equipment

See Table 2.

Facilities

A CRPC emergency department must have geographically separate and distinct pediatric medical/trauma areas that have all the staff, equipment, and skills necessary for comprehensive pediatric emergency care. Separate fully equipped pediatric resuscitation rooms must be available and capable of supporting at least two simultaneous resuscitations. A level 1 (per AAP/SCCM standards)[4] pediatric intensive care unit must be available within the institution.

Access, Triage, Transfer, and Transport

A CRPC must:

- Assist with the provision of regional pre-hospital direct medical control for pediatric patients.
- Promote a regional network of direct medical control by lower-level hospitals within the region by working closely with the regional EMS medical director to assure:
  1) standards for pre-hospital care.
  2) triage and transfer guidelines.
  3) quality indicators for pre-hospital care.
- Accept all patients from a defined region who require specialized care not available at lower-level hospitals within the region.
  1) have prearranged transfer agreements that network hospitals within a region to assure appropriate intra-emergency department triage and transfer to assure optimum care for seriously and critically ill or injured pediatric patients.
  2) have prearranged transfer agreements for pediatric patients needing specialized care not available at the CRPC (eg, burn specialty unit, spinal cord injury unit, or rehabilitation facility).
- Assure a pediatric transport service that:
  1) is available to all regional participating hospitals.
  2) provides a network for transport of appropriate patients from all regional hospitals to the CRPC, or to an alternative facility when necessary.
- Provide 24-hour consultation to all lower-level facilities for issues regarding:
  1) emergency care and stabilization.
  2) triage and transfer.
  3) transport.

Education, Training, Prevention, Research, and Quality Assessment and Improvement

A CRPC must support all the issues and activities under general facilities in addition to the following:

- Organize a network for public education regarding issues of pediatric emergency access, care, and injury prevention utilizing the resources of standby, basic, and general EDs within a region.
- Support EMS agencies and EMS directors in maintaining a regional network of pre-hospital provider education and training that utilizes the resources of standby, basic, and general EDs and assures dissemination of new information, maintenance of pediatric emergency skills, and updates standards of care and protocols.
- Assure that a network of pediatric emergency care education is available to all health care workers utilizing the resources of standby, basic, and general facilities within the region.
- Organize a structured quality assurance and improvement program with the assistance and support of local/state EMS-EMSC agencies that allows ongoing review and:
  1) reviews all issues and indicators described under standby, basic, and general EDs.
  2) provides feedback, quality review, and information to all participating hospitals, EMS and transport systems, and appropriate state agencies.
  3) develops quality indicators for the review of pediatric care given that are linked to periodic continuing education and reviewed at all participating institutions.
- Assists in organizing and providing support for regional, state, and national data collection efforts for EMSC that include:
  1) trauma registry.
  2) injury and illness epidemiology.
  3) pediatric specific quality indicators.
- Has an organized program for research in pediatric trauma, emergency care, critical care, and injury prevention.

Administrative Support and Hospital Commitment

A CRPC must have administrative support to:

- Assure an adequate staff that is properly trained.
- Assure that financial resources are available to provide necessary equipment for emergency and transport care.
- Assure that facilities are designed for easy access and appropriate for the care of pediatric patients as described in these guidelines.
- Provide access to emergency care for all urgent and emergent pediatric patients.
- Assure available support services to the ED including:
  1) Social services.
  2) Child life.
  3) Child/sexual abuse support.
  4) Respiratory care.
- Assist local and state agencies for EMS-EMSC in organizing and implementing a network for providing pediatric emergency care within a defined region that:
  1) provides transfer and transport agreements with lower-level facilities.
  2) provides transport services when needed for receiving critically ill or injured patients within the regional network.
  3) provides necessary consultation to participating network hospitals.
  4) provides indirect (off-line) consultation, support, and education to regional pre-hospital systems and supports the efforts of regional and state pre-hospital committees.

5) provides medical support to assure quality direct (on-line) medical control for all pre-hospital systems within the region.

- Organize and implement a network of educational support to all regional hospitals that:
  1) trains instructors to teach pediatric pre-hospital, nursing, and physician-level emergency care.
  2) assures that training courses are available to all hospitals and health care providers within the region.
- Provide support for a regional data system that:
  1) defines the population served.
  2) maintains and monitors specific quality indicators.
  3) is adaptable to answer questions for clinical research.
- Support active institutional and collaborative regional research.
- Have a physician director of the pediatric ED who is board certified/prepared in pediatric emergency medicine.

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